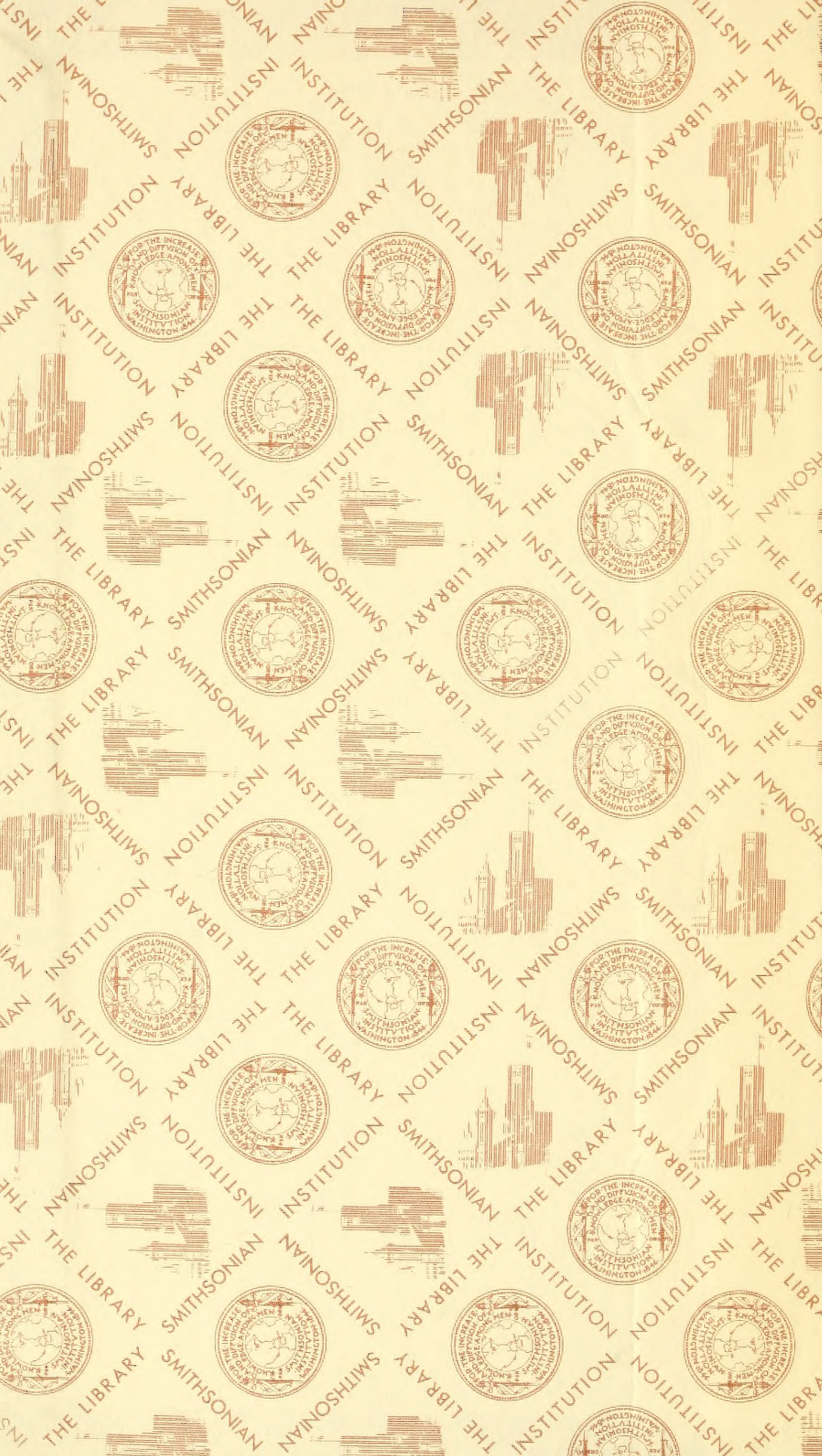

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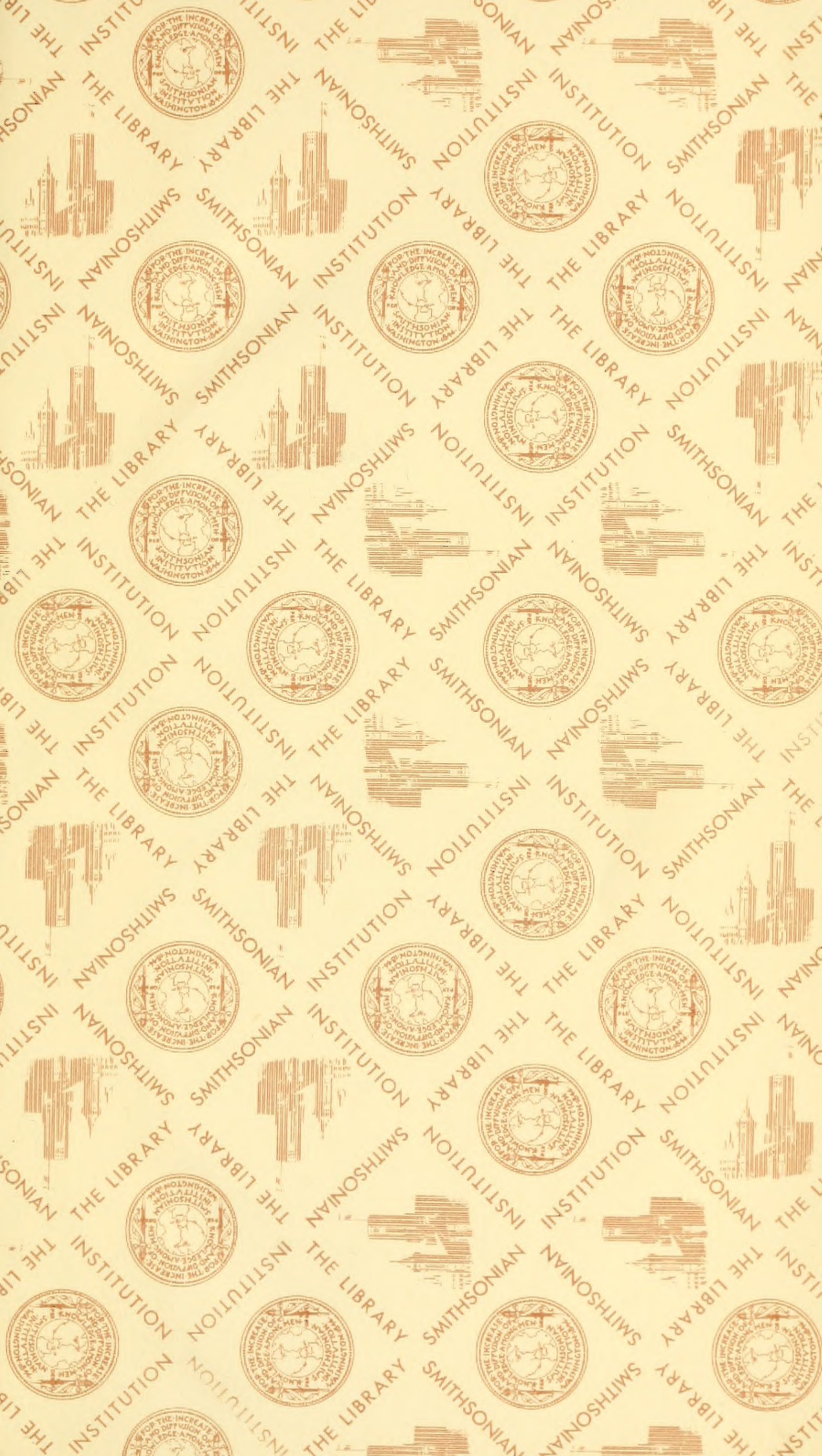
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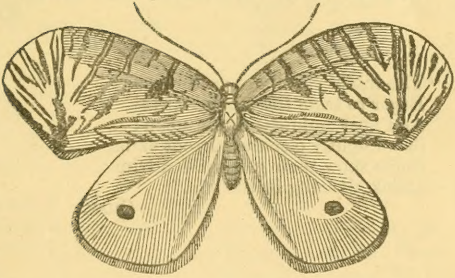

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1870—1.

" Her divine skill taught me this,
' THAT FROM EVERYTHING I SAW
I COULD SOME INSTRUCTION DRAW,
AND RAISE PLEASURE TO THE HEIGHT,
THROUGH THE MEANEST OBJECT'S SIGHT.' "
G. WITHER.

" Whatever creeps the ground,
Insect or worm; those waved their limber fans
For wings, and smallest lineaments exact
In all the liveries decked of summer's pride
With spots of gold and purple, azure and green."
MILTON.

" The insect youth are on the wing,
Eager to taste the honied spring,
And float amid the liquid noon:
Some lightly o'er the current skim,
Some show their gaily-gilded trim
Quick glancing in the sun."
GRAY.

EDWARD NEWMAN, PRINTER, DEVONSHIRE STREET, BISHOPSGATE.

C. V. RILEY,
Washington, D. C.

CONTENTS.

ALPHABETICAL LIST OF CONTRIBUTORS.

Aldridge, R. 169, 171, 181
Anderson, Henry 459
Angus, W. C. 58
Argent, W. J. 43, 58, 84, 184

Barnesby, Geo. J. 281
Barns, Thomas 265
Barrett, J. P. 59, 142, 215, 416
Battersby, Mrs. F. I. 147, 148, 183
Beck, Richard 411
Bethell, Miss E. 423, 452
Biggs, C. J. 165
Bignell, Geo. C. 31, 169, 170, 216
Birchall, Edwin 57, 67, 81, 82, 119, 198, 207
Bisshopp, Edward F. 17, 146, 181, 279, 408, 409, 410, 416, 428
Bond, Frederick 168
Bourne, M. 82
Bowyer, R. W. 452
Bradbury, S. 416
Braund, Rev. E. 201
Bree, Charles Herbert 312
Brooks, Cecil 373
Brooks, W. H. 346
Brown, Thomas 375, 395
Buckton, G. B. 452
Bull, H. A. 179
Burder, F. 410
Burney, Rev. Henry 443
Butler, A. G. 27
Butter, J. S. 276
Button, D. T. 220, 393
Buxton, A. F. 413, 459
Buxton, E. C. 283

Calderbank, T. 181
Callender, Arthur W. 418
Campbell, John M. 43, 197
Cansdale, W. D. 181
Capper, Samuel James 82, 265, 417
Carbonell, Mary 18
Clifford, J. R. S. 113, 278, 279, 291, 292, 346, 347, 375, 422, 423, 424, 436, 441, 446, 460
Clogg, Stephen 114, 179, 185, 356, 397, 414, 418
Cole, W. H. 149, 355
Corbin, G. Bentley 406, 407, 415, 416, 421
Cordeaux, John 60, 307
Cosgrave, E. MacDowel 263
Cox, H. Ramsay 17, 81, 84, 165
Crewe, Rev. H. Harpur 348
Crotch, G. R. 7
Cumming, L. 172

Daltry, Rev. T. W. 18, 118, 364
Daltry, Thomas 437
Davidson, A. 213, 265
Davis, R. L. 114
Davis, W. E. 416, 443, 444
De Mattos, W. Sydney 146
Doncaster, Samuel 322
D'Orville, H. 414
Doubleday, Henry 29, 42, 57, 76 103, 200, 420, 430

Druce, A. W. 44
Du Moulin, Arthur 426

Earl, E. 428
Eccles, Jesse 163
Eedle, Thomas 183, 199, 200
Elisha, G. 170
Enock, Frederick 142, 144, 148, 167, 171, 172, 310
Evans, H. A. 416
Eyles, Rev. E. H. 426

Farn, A. B. 87, 180, 246, 408
Fetherstonhaugh, S. Radcliff 114, 215, 228
Fitch, E. A. 203
Fletcher, James 170

Garrow, James 349
Gascoyne, G. 28
Gatcombe, John 58, 97, 146, 413
Gerrard, James 84, 294
Gillham, John 82
Goodyear, Thomas 79, 317
Goss, Herbert 411, 412
Greasley, William 183
Greene, Rev. Joseph 97, 98, 182, 245, 280, 357, 419
Greening, N. 168
Gregson, C. S. 70, 80, 97, 99, 115, 202, 242, 243, 385, 396
Gregson, William 204
Grensted, Henry W. 61
Greville, H. D. 179, 444
Gustard, H. Stafford 413, 414

Hall, E. A. 371
Hambrough, Rev. Windsor 17, 355, 396
Hamel, Egbert D. 427
Hamilton, J. 62, 182
Hamilton, W. H. 314
Hardy, James 385
Harman, F. E. 212, 395, 396
Harris, Charles 317
Hartley, Bernard 19
Harwood, W. H. 180
Hast, E. H. 182
Healy, Charles 1, 79, 80, 179, 365
Hedworth, T. H. 98, 116
Hervey, Rev. A. C. 372, 459
Hewitt, John M. 396
Hiley, Henrietta J. 444
Hobbs, William 214
Hodgkinson, J. B. 411, 415, 437
Hoey, T. N. 164, 412
Holford, C. E. 316, 319
Hudd, Alfred E. 201, 226
Hunt, A. L. 182
Hutchinson, T. 96, 167

Inman, M. N. 447, 455

Jarvis, J. B. 59, 414
Jenner-Fust, H., jun. 242, 314, 318
Jennings, Rev. P. H. 173, 445
Johnson, William 449
Jolliffe, D. 169

Kay, R. 421
Kefford, W. R. 227
Kenyon, E. R. 213
Kershaw, Mark 442
King, George Hoadley 423
Klein, Sydney T. 184, 316, 320

Landon, John 182, 348
Lang, Charles Henry 280
Lilly, John A. 406
Livett, H. W. 212
Livingston, Clermont 82
Lock, G. 20
Lockyer, Bernard 418, 424, 425, 433, 439, 458
Long, C. F. 409, 412
Lucas, H. A. 445
Lucas, T. P. 215

Machin, William 32, 77, 184, 279, 293, 393, 440
Maling, W. 227, 445
Mann, W. 452
Marsden, H. W. 163, 179, 277
Marshall, Thomas 182
Marshall, W. C. 244
Masters, H. 117
Mathison, John 168
May, W. 201

McGuffog, G. 59
Meek, E. G. 31
Meldola, R. 319
Melhuish, J. H. 265
Melvill, J. Cosmo, jun., 244
Merrin, Joseph 139, 146, 173, 178, 266, 320
Mitchell, A. 168
Moncreaff, Henry 43, 200, 239, 240, 242, 321, 430
Moore, Henry 30, 81
Moore, J. 169, 204, 461
Morris, T. Edward 96
Müller, Albert 45
Musgrave, M. G. 115

Nash, Rev. Alex. 78
Neave, B. W. 407
Newman, Edward 1, 20, 32, 33, 100, 114, 135, 136, 137, 138, 140, 141, 148, 150, 158, 160, 161, 162, 164, 169, 174, 175, 176, 185, 191, 192, 194, 196, 198, 211, 223, 225, 267, 276, 287, 303, 327, 335, 336, 337, 351, 358, 367, 379, 382, 383, 399, 411, 413, 462
Noel, Byron 356, 458
Nosworthy, J. C. 150

O'Farrell, H. H. 29
Oldfield, George W. 238, 371
Oldham, C. 444
Oxley, T. J. R. 215

Parmiter, T. 179
Parry, George 58, 113, 172, 366, 370, 394, 417, 418, 446
Parsons, James 32, 409
Pearson, W. H. 373
Peebles, James W. 366
Penny, C. W. 315
Perkins, V. R. 112
Pickard-Cambridge, Rev. O. 19, 65
Piquet, J. 442
Pitman, M. A. J. 57, 457
Porritt, George T. 20, 141, 166, 177, 201, 217, 226, 275, 317, 360, 408, 453
Power, John A. 372
Preston, Rev. T. A. 80
Pristo, James 118, 200
Purdey, William 459

Raynor, C. L. 172
Raynor, G. H. 147, 213, 214, 264, 293, 294, 455
Reeks, Henry 308, 309, 318, 320, 331, 409, 430, 444
Rigby, Frederick 117
Ritsema, C. 264
Robinson, W. Douglas 218, 230, 372
Romanes, G. 98
Roper-Curzon, Edwin 445
Rowe, J. Brooking 180
Rowntree, James H. 197, 264, 278
Roxburgh, Thomas J. 214
Russell, J. 456

Sarll, J. T. 413
Sellon, Rev. E. 164, 167
Shearwood, Geo. P. 18
Sim, George 416
Skelton, W. J. 164, 178, 334
Slade, W. 294, 332
Smith, Alpheus 83
Smith, W. Seth 372
Spiller, A. J. 183
Spiller, J. J. 113
Standish, F. O. 147, 148
Stevens, Samuel 360
Stowell, Rev. Hugh A. 165, 167

Talbot, William 396, 407, 430, 450
Tawell, James A. 280
Taylor, George 418
Taylor, T. A. 228
Thompson, W. E. 293
Thomson, W. 185
Thorpe, John 143, 149, 412
Timms, E. W. 172
Todd, Rev. E. Hallett 167
Towndrow, R. F. 443
Tratman, H. E. 172
Tuely, N. C. 80

Venables, F. 212
Verrall, G. H. 21

Walker, Francis, F.L.S., G.S., &c. 48, 107, 123, 151, 156, 185, 197, 204, 255, 271, 339, 431, 450
Wassermann, J. C. 450
Watkins, C. J. 213, 371, 406
Watson, Rev. James 164
Wells, William, jun. 427
Wesley, J. S. 171, 346
West, W. 375
Wheeler, F. D. 410
White, E. 411, 412
White, John S. 197, 411
White, Rev. Wm. Farren 319, 446
Wiglesworth, J. 280
Wildman, T. 99
Wilkinson, F. 114
Wilson, Owen S. 315
Wonfor, T. W. 113, 144, 413
Wratislaw, Rev. A. H. 43, 78, 114, 204, 294, 320, 366, 419, 420

ALPHABETICAL LIST OF SUBJECTS.

Abia sericea, food-plant 20
Acari on cage birds, parasitic 292
Acaridæ in the buds of black currant 190
Acarus, red velvety 289; in sheep *id.*; parasitic on crane-flies 374; on crane-flies 408
Acentropus niveus 421
Acherontia Atropos, time of appearance 32; dimorphism of larva 102; on breeding 143, 458
Acidalia circellata near Canterbury 366
,, emutaria, description of the larva 408; in the New Forest 416
,, fumata 104
,, interjectaria *id.*
,, mancuniata *id.*; description of the larva 454
,, prataria 416; life-history 358
,, promutata 104
,, remutata, description of the larva 360, 408
,, rubricata, description of the larva 275
,, rusticata 416; description of the larva 176
,, straminata 104
,, strigaria 237
,, subsericeata, description of the larva 453
Acontia ? inexacta 130
,, partita *id.*
Acronycta Alni at Torquay 18; on birch 171; on hazel *id.*; larva *id.*; at West Stow 320; at Birmingham 348; near Chesterfield 396; near Liverpool 417; larva, near Newcastle-on-Tyne 437
,, leporina at Ipswich 146; larva 170
Adela cuprella 80
Ægosoma scabricorne 238
Agdistes Bennetii, description of the larva 321
Aglaia, variety 447
Agrophila sulphuralis at Erith 170; at Clapton 184
Agrotis inobtrusa 128
,, internexa *id.*
,, ?? marginata 129
,, ? mollis *id.*
,, puta 396
,, Ripæ taken inland 150
Aleucis pictaria at Brockenhurst 82; life-history 382
Ammophila arundinacea, galls on 189
Allis, Mr. T. H., death of 174
Anthicus emaculatus 405
Anobium paniceum 235
Anthocharis Cardamines, abnormal specimens 63; early appearance 293
Anthomyia muscoides 344
Anthrax micrargyra 262
,, plagiata *id.*
,, subnotata *id.*
,, suffusa *id.*
,, parasitic on Agrotis 254
,, tenuis 271
Anticlea sinuata at Tuddenham and Icklingham 204; near Canterbury 366; caterpillars 420; near Newbury 444
Apamea ophiogramma 183
Aphides, flight of 204; migration 347, 354, 375
Aphis Brassicæ 197
Aphnæus Tamaniba 51
Aplasta ononaria at Folkestone 459
Aporia Cratægi, life-history 135; at Faversham 164, 178

Arctia Mendica, variety 314
Arge Galathea drops its eggs and does not affix them 31
Argiolus, economy 112; larvæ 113, 410; depraved taste in 213
Argulus foliaceus 351, 428
Argynnis Adippe and A. Niobe 42, 101, 110, 174
„ Aglaia, variety 164
„ Euphrosyne, curious variety 395; variety 409
„ Lathonia near Faversham 165; at Rainham 212; near Ipswich 409; in Jersey 442
„ Niobe in the New Forest 16, 27
„ Paphia near Scarborough 163; variety 410
„ Valezina at Canterbury 370
Argyrolepia luridana, a Tortrix new to Science 80
Army worm 91
Asilus deformis 259
„ enitens *id.*
„ mivatus *id.*
„ preying on Gryllidæ 252
Aspilates curvifera 154

Batoneus Populi: a mite injurious to the aspen in Scotland 434
Bee of the Egyptian monuments 288; honey, questions on 320
Bees, queen, encasement 250; early swarm 294; deluded by the colour of spiders 315
Beetle, new British 268; destroying ten-weeks' stock 352; ship-timber 367
Beetles on the north-east coast 98; new British 111, 112; carding 356
Blennocampa Cerasi 236
Blind inhabitants of figs 399
Boarmia perfumaria in the New Forest 279
Boletobia fuliginaria in the Blackfriars Station of the Metropolitan Railway 172
Bombylius exiguus 272
„ miscens 271
„ nivifrons *id.*
Bombyx Pernyi (silk-moth) 28
„ processionea in Dorsetshire 374
„ Quercus, attractive influence exercised by females 441; larvæ feeding on ivy 457
„ Rubi, do the larvæ feed in the spring? 59; does it feed after hybernation? 78; larvæ burying in the earth 458
Books, new 378
Borbopora Kraatzii 404
Bot or nose-fly of the sheep 307
Botys fuscalis with a portion of the puparium still attached 397
Brachycentrus subnubilus, hemigynous specimen 173
Briarda? subapicalis 131
Brulerie, M. de la 376
Butalis cicadella at Weybridge 421
Butterflies, classification 34; collected in Egypt, along the African shore of the Red Sea, and in Arabia 48; variation in 264; near Wotton-under-Edge 293; in Carmarthenshire 315

Cabera exanthemaria, description of the larva 317
„ Pusaria, variety 215
Calamia lutosa near Huddersfield 201
Callimorpha Hera near Exeter 414
Calocampa exoleta, food 242
Camponiscus Healæi 179
Canary tick 266, 280, 281
Captures near Wanstead 43; in North Staffordshire 118; at Bury St. Edmunds 149; at Folkestone 164; near Gravesend 220; on the Kent and Essex coasts 393; of Lepidoptera in July *id.*; near Canterbury in July 394; near Newcastle 445
Carpocapsa pomonana, food 375
Caterpillar eating potatoes 184

Catocala Fraxini at Canterbury 58; at Cosham 418; in the Zoological Gardens *id.*
Celæna intractata 127
„ ? plagifera *id.*
Cerastis erythrocephala at Canterbury 446; at Darenth Wood 461
Chariclea Delphinii in Norfolk Crescent 228
Chelonia caja, fly-parasite on 146; eggs 425; bred from eggs laid this year 452; second brood *id.*
Chlorops lineata 236; swarms 297
Chœrocampa Celerio near Usk 18; near Worcester 29; near Faversham 165; at Cheltenham 173; at Lytham 204; at Battle 214; larva 234; at Southport 411
„ Elpenor, singular variety 146
„ Nerii at Birmingham, 144
Chelifer cancroides 428
Chelonia villica feeding on blackthorn 319
Chermes Abietis, gall of the spruce fir 371
Cirrhœdia xerampelina—its birth note 18
Coccinellæ and Syrphi, swarms 15
Cockchaffer in March 406
Cœnonympha Davus 103, 213
Coleophora Therinella 32
„ vibicella 148
Coleoptera, British 7; new British 11, 63, 252, 461; work on the species 280; and Diptera, works on 316; Lacordaire's 376; collected in Ireland 397; near Nantes 405
Coleopterous monstrosity 25
Colias Edusa at Dulwich 17; in Staffordshire 18; in June 113; at Huddersfield 226
„ „ *var.* Helice 165
„ Europome 355
„ Hyale in the Isle of Thanet *id.*; at Dover 213
Collecting in the Holy Land 353; in the Pyrenees *id.*; in the caves of Ariège *id.*
Conops auratus 339
Copris lunaris at Hertford 445
Coremia ligustrata 105
„ oppressa 154
Corrosive sublimate, solution as a preservative 319
Cosmopteryx Lienigiella 86
Cossus Ligniperda, breeding 456
Crambus perspicuus, 155
„ pinetellus at Clapton 184
„ selasellus 105
Cucullia Chamomillæ bred 58
„ Umbratica at Inverurie 349
„ Verbasci, larva 194
Curculio, cocoon 372
Currant moth, ravages of the larva 347
Cyclopides Phidyle 56
Cymatophora ridens bred 147
Cynips Lignicola, scent 15; in Ireland 197
„ ramuli on oak 189
„ Renum 236

Dacus sexmaculatus 344
Damalis cinctipes 260
Dasycampa rubiginea in Monmouthshire 20; at Plymouth 216; at Lyndhurst 294
Dasypogon contrarius 257
David, collections of M. Armand 404
Deilephila Euphorbiæ near Ipswich 181
„ Galii at Birmingham 167, 182; at Chepstow 167; near Derby *id.*; in Gloucestershire *id.*; at Leominster *id.*; in Buckinghamshire 168; in Herefordshire *id.*; near Nottingham *id.*; at Selkirk *id.*; at Warrington *id.*; at Wolsingham *id.*; at Stalybridge 169; at Stamford Hill *id.*; at Plymouth 180; near Bolton 181; at Weston-super-Mare *id.*; at Witham *id.*; on Durdham Downs 182; at Ipswich *id.*; at Newcastle-on-Tyne *id.*; at Stanley-by-Perth *id.*; at Tooting *id.*; larva at Wallasey 183; description of larva

191; at Cainscross 201; moultings *id.*; at Plymouth 216; larva 234; at Plumstead 265; emergence on the 8th of February *id.*; near Liverpool 417
Deilephila lineata at Birmingham and Bromsgrove 144; at Weston-super-Mare 169; in Cornwall 179; near Maidstone *id.*; at Colchester 180; at Plymouth *id.*, 216; larva 180; at light 199; at Devonport 214; in the Isle of Man *id.*
„ Livornica in Staffordshire 96; at Brighton 113; at Looe 114; at Waltham Abbey *id.*; description of the larva 169; captures *id.*
Deiopeia pulchella at Folkestone 15, 444; near Reading 80; near Scarborough 411; at Middleton 412; at Ipswich *id.*; at Dover *id.*; near Brighton *id.*; at Brighton *id.*, 413; at Hove and Brighton 413; at Ventnor *id.*; at Lulworth *id.*; at Swanage *id.*; at Plymouth *id.*; in Cornwall 414; near Bristol *id.*; in Monmouthshire *id.*; bred in England 443; in Dorsetshire 444
Denny, death of Mr. Henry 285
Depressaria cnicella, economy 200
Dermestes murinus destructive to hides 83
Diacanthœcia Cucubali in Westmeath 148
Dianthœcia Barrettii, in the matter of 30, 57, 77, 97; or conspersa 81, 86
„ irregularis bred 114; description of the larva 177; failure in breeding 366, 419; captures 420
Dicranura bicuspis, &c., at Leominster 96
„ vinula with three wings 114; two years in pupa 173
Dimorphophora syrphoides 272
Diphthera Orion at East Looe 397
Diptera in the Entomological Club Collection 21; collected in Egypt and Arabia 255, 271, 339
Dipteron, pollen-mass of an orchid on the eye 298
Dormice at sugar 58, 84
Doubleday, health of Mr. H. 287
Drapetis ænea 273
Dryops femorata at Brixham 445
Dysthymia luctuosa near Stroud 115; in Hampshire 172

Eastern Entomological Society of London 290
Eedle, Mr., return from Scotland 198
Emmelesia affinitata in Scotland 43
Emus hirtus in the New Forest 397
Engis bipustulata 8
„ glabra *id.*
„ humeralis *id.*
„ rufifrons *id.*
Ennomos tiliaria, larva 196
Ennychia ostrinalis 105
Entomological pins 452
Entomological Society of Belgium 354
Entomological Society's Proceedings 11, 25, 62, 85, 100, 110, 173, 189, 234, 252, 267, 294, 322, 349, 397, 461
Entomologist to the Royal Agriculturist Society 379
Entomologists in France 352
Entomology, economic, prizes for collections 290; in Ireland 360; and other things at York 390; of Syria 404; at Longfield Rectory 445
Ephemeridæ, monograph of 253
Ephestia new to Science, description 385
Ephyra strabonaria of Zeller 225
Epichnopteryx betulina 86
Epinephele Hyperanthus 201, 226; with ocellated spots on the upper side 212
„ Tithonus in Shropshire 238
Epping Forest, enclosure 303

Epunda lichenea at Brixham 445
„ lutulenta at Brixham *id.*
Erax cinctipes 258
„ cinicolor *id.*
Erebia Ligea 278
„ Medea, description of larva 136
Eremobia ochroleuca near Bury St. Edmunds 43; near Weymouth 459
Eriogaster lanestris 314
Eristalis punctifer 274
Euchelia Jocobeæ 98
Euphasia? compta 130
Euphrosyne, remarkable variety 113
Eupithecia consignata, description of the larva 160
„ constrictata 105
„ denotata 104
„ irriguata, description of the larva 348
„ pimpinellata 104
„ satyrata 97
„ subciliata 105
Eupitheciæ, larvæ 430
Eupœcilia, genus, food and habits 242
Euproctis? innotabilis 124
Eurigaster incisus 340
„ leucomelas 339
Exchanging 266, 277
Exoprosopa antica 261
„ disrupta *id.*
„ gloriosa 260
„ marginalis *id.*
„ nigrifera 261
„ paupera *id.*

Fag or tick 306
Fettig, M. l'Abbé 378
Fire-flies, so called, at Caterham 16
Flesh-flies or blow-flies 309
Fly? is it possible to drown a 243
Frontina latifascia 340
Fungus on pear-trees 429

Gadfly of the ox 149
Gall midge of the ash 248
Gall on ground ivy 118; on the leaves of a Carex 298; on Salix nigricans 316; of the spruce fir 371; on the poplar 428; in the bramble *id.*
Gall-flies, odour 111
Gall-like swellings on the juniper 173
Gall-makers and their parasites 239
Galls and gall-makers 450
Galls of the maple 13; on Ammophila arundinacea 189, 264; of Quercus toza 288; of Campanula rotundifolia 295; on Pteris aquilina 323; on the elm 375; woody, of the oak, squirrels eating 429
Gelechia confinis of Stainton 243
Gnophos obscurata, &c., varieties 102
Goat-moth, caterpillar 426
Gonia guttata 341
„ insueta 342
Grammodes? latifera 132
Grapholita microgrammana 107
Grapta C-album bred in July 371
Grub in wine-corks 44; tea 185
Gymnancycla canella, life-history 430
Gynandromorphism, partial 26

Haggerstone Entomological Society 26, 205, 269, 324; annual exhibition 232
Halias prasinana, sound caused by 116
„ wavaria 416, 424
Haliday, Mr., death of 150
Haltica fuscicornis an enemy of seedling saintfoin and other Leguminosæ 309; ravages of, near Andover 318
Hawk-moth, English humming-bird 146
Hayling Island, a visit to 200
Hecatera serena in Westmeath 148
Heliothis armiger, larvæ 25; at Liskeard 418
„ peltiger at Bognor 203
Hemiptera, new British 252
Hepialus lupulinus, second appearance 460

Herbula determinata 134
Herina strigulosa 345
Hesperia Actæon at Swanage and Tyneham 179
,, Comma in Shropshire 238
,, Linea, scarcity 278
,, Sylvanus, economy *id.*
Homœosoma saxicola, food 396
Hooktip, beautiful, description of the larva 334
Hornet barking an ash-branch 294; gnawing the smooth bark of elm 320
Hydrocampa Nymphæata 105
Hymenoptera, gynandromorphism 299; rare, at Glanville's Wooton 350; to set 370

Ino Globulariæ in Wales 146
Insect, name of 314
Insect-enemies of strawberries 397
Insect-enemy of turnips and rape, new 331
Insect-galls in the flowers of the tansy 64
Insect-hunting grounds, Irish 67, 119
Insects in cabinets, greasy spots caused by 61; collecting abroad, 99; immature sexuality, &c. 296; infesting the sheep 306; shower of at Bath 312, 323, 332, 349; mould on 373; turnip, during 1870, 385; educational collection 403; eyes of 426
Iolaus Tajoraca 61

Janira, small specimens 212

Labia minor flying 310
Lacordaire, M., death of 150
Lampides Agave 53
,, Bura 54
,, Cleodora *id.*
,, Ethoda 53
,, Ferrana 52
,, Itea 55
,, Lyce 54
,, Neis *id.*
Lampides Olympusa 53
,, Pandama 54
,, Samia 55
,, Uranicola 52
Laphria nobilis 258
Laphygma retrahens 126
Larentia multistrigaria, variety 57
,, ruficinctata 104
Larva in elm wood 288; name of 372
Larvæ, two in one cocoon 459
Lateness of the season 78, 446
Laycock, death of Mr. 322
Lemiodes pulveralis 31
Lepidoptera collected in Egypt, along the African shore of the Red Sea, and in Arabia 48, 123, 151; varieties and aberrations 70; collecting abroad 79, 99; have any the power of rendering themselves invisible? 97; of Great Britain and Ireland, the Cabinet List by Dr. Knaggs 103; in the Isle of Thanet 165; on Hackney Marshes 184; of Kirkcudbrightshire 218, 230; in Cornwall 244; notable British 253; Mr. Eedle's Scotch 267; at Southend 279; in Epping Forest 293; malformation in the antennæ 295; at Wimbledon Common 422; at Witherslack 437; captured in the New Forest 439; bred in 1871, 440; in Ayrshire 459; preserved larvæ 461
Lepidopterology, British, notes on progress in during the last few years 202
Lepisma saccharina 299
Leucania albipuncta 234; at Canterbury 172, 417; in Blean Wood 418
,, pubescens 418
,, vitellina at Canterbury 58
Leucanidæ, certain British, critical notes on 45
Leucanimorpha disjuncta 133
,, ? tenebrifera *id.*
Leucophasia Diniensis at Witherslack 411

Leucophasia Sinapis at Ipplepen, South Devon 114
Limenitis Sibylla 409; variety 410
Limexylon navale 367, 405
Liparis chrysorrhœa, worms infesting larvæ 356
  ,, dispar, the larvæ found 172, 197, 213; near Odiham 183; management 265; breeding 279; in Essex 423; notes on 452
Lithosia pulchella in New Zealand 215
Lithostege griseata, life-history 379
Lobophora hexapterata at Limerick 396
Lock, death of Mr. 462
Locust near Halifax 58
Locusts 107; English 13, 25, 85, 100; in Aberdeenshire 58; extracts from notes on 156
Lough Dan and the Devil's Glen 122
Lozotænia latiorana 106
  ,, piceana *id.*
Lycæna Argiolus near Gateshead 98
  ,, Arion, contribution towards a life-history 139, 338; description of the egg 140; larvæ 166
  ,, Corydon, description of the larva 138
  ,, Salmacis in Berwickshire 410
Lythria purpuraria, description of the larva 175
Lytta vesicatoria 60

Macaria alternata at East Looe 397
Macroglossa Bombyliformis 81, 103; at Inverurie 349
  ,, fuciformis 103
Macro-Lepidoptera, grouping of British 300
Maggot, tea 162
Mamestra immiscens 127
  ,, mixtura 126
  ,, Persicariæ, profusion 418
Mecyna polygonalis near Bury St. Edmunds 32, 76
Melanagria Galathea, black variety 461
Melanthia Rubiginata *var.* Plumbata 227
Meloë rugosus 12, 234
Mice at sugar 84
Micro-Lepidoptera in the City 32; on Hackney Marshes *id.*
Midas maculatus 272
Midge, wheat 185
Miltogramma minuscula 341
Mites, benzole for destroying 290; in cabinets 319
Mixodia Hawkerana, life-history 240
Moth, curious fact in emergence 57; minute 372; name of 406; cinnabar, larva 407
Moth-trap, American 61, 82, 115; new 355
Moths, British, error in 316; and "sugar" 407, 425, 426; female, at sugar 460
Museum at Clifton College 280
Myrmica domestica 83

Narcillac, M. de 377
Nemeobius Lucina near Wetherby 346; early appearance 455
Nemestrina Ægyptiaca 260
Nemopoda varipes 345
Nemoria viridata 415; description of the larva 383
Nephopteryx angustella 77
  ,, ? priscella 155
  ,, ? spurcata *id.*
Neuroptera of the British Islands 63
Newcastle-on-Tyne Entomological Society 62, 254
Noctua larvæ, number of claspers in young 433
Notes on oak-apples 431
Nisoniades Doris 56
Nonagria brevilinea 234
Notodonta ziczac with three wings 147; second brood 183

Nyssia hispidaria at Richmond Park 59; description of the larva 141
„ lapponaria in Scotland 311
„ lapponica in Scotland 290

Oberthur, M. René 376
Odontopera bidentata, larva 430
Orgyia antiqua, cocoon 428
„ cœnosa, agamogenesis in 395
„ gonostigma and the Volunteers 436
„ pudibunda 428, 449, 450
Oscinus rufescens 345
Otiorhynchus sulcatus and peach-trees 314
Oxypoda, British species 296
Oxyptilus lætus 189

Pachetra leucophæa, new locality 200
Pachnobia alpina in Perthshire 183
Pachytylus cinerascens 108; a British insect 185
„ migratorius 108; correction 185
Pamphila Proclea 56
Pamplusia subsequana 107
Pangonia subfasciata 257
„ zonata 256
Papilio Machaon at Ipswich 17; at Dawsmere 346
Parasite on prawns 149; of the peacock 295; egg 357; of the tortoise 374
Parasites on canaries 266, 280, 281
Pea-weevil 117
Pelopidas Midea 56
Pempelia obductella 237
Penicillaria petrificata 131
Penthina Grevilleana 106
„ similana 105
„ ustulana *id.*
Pericallia Syringaria, is it double-brooded? 170
Peronea proteana of Herrich-Schæffer 243
Petasia nubeculosa in Scotland 114
Phalacrus, monograph of genus 404
Phibalapteryx aquata, larva 426
„ conjunctaria near Newcastle 227
„ lapidata in Ireland 215
„ polygrammata 105
Phigalia pilosaria 336
Philonthus cicatricosus 43
Phlœodes obcordata 378
Phlœotribus Oleæ near Halifax 238
Phlogophora empyrea at Battle 214
„ meticulosa, hybernal specimen 20
Photedes captiuncula near Bowness 396
Phoxopteryx Mitterbacheriana 80
Phycis Davisellus, description 449
Phycis, new British 444
Phyllotoma mellita 1; life-history 2
Phylloxera coccinea 354
Pieris Daplidice at Brighton 163, 411; near Portsmouth 163; at Portsmouth 179; at Dover 411; near Brighton *id.*; in Jersey 442; near Dover 446
„ Lordaca 48
Pins, black-varnished 403
Platypteryx lacertula, early appearance 147
„ the genus 455
Plusia Interrogationis in Sussex 254
„ Ni 64
„ orichalcea in Cornwall 172
Pœcilocampa Populi 334
Polia nigrocincta, contribution towards a life-history 192; bred 421
Polyodon, variety 427
Potato-feeder 200
Prize Essays 62

Psyche?? luteipalpis 125
,, ?? nigrimanus *id.*
,, reticella, female 237
Pupa of Atropos 59
Pygæra bucephala with three wings 173
Pyrameis Atalanta, singular variety 142

Quill pens 244

Retinia Buoliana 106
,, occultana 107
Rhipiphorus, parasitism 14
Rhodocera Rhamni, variety 179, 322
Rhodophea formosella 142
Rhynchites æneo-virens 10
,, auratus 9
,, Bacchus *id.*
,, Betulæ 11
,, cæruleocephalus *id.*
,, conicus 10
,, cupreus *id.*
,, germanicus *id.*
,, interpunctatus *id.*
,, megacephalus 11
,, nanus *id.*
,, ophthalmicus 10
,, pauxillus *id.*
,, planirostris 11
,, Populi 9
,, pubescens 10
,, purpureus 2
Rilia?? lignifica 125
Roses of the larch 288

Sarcophila? guttata 343
Saturnia Carpini, fifty attracted by one female in two days 144; inquiry concerning 334
Satyrus Semele, abnormal specimens 62
,, Tithonus 242; in Ross-shire 265, 318
Sawflies inhabiting Britain, life-histories 1
Sawfly larva feeding within the stem of a fern 148; larva 356; captures 365
Scale-insect or mealy-bug 327
Scopula effrenata 152
,, flexifera 151
,, includens 152
,, inscita *id.*
,, serpentina *id.*
,, submarginalis 153
,, variabilis 151
Scoria dealbata in Staffordshire 264
Scorpion, how it feeds 20
Scydmænus rufus 324
Season, lateness 319
Sesia Bembeciformis, larva 280
,, Cynipiformis at Leominster 215
,, Tipuliformis, economy 460
Sherwood Forest 207; four days in 364
Silk-culture in Japan 87
Sirex Gigas 197
,, Juvencus 287
Slug larva of the pear 427
Smerinthi, hybrid 450
Sphinx Convolvuli near Chepstow 164; near Droylsden 411; near Liverpool 417; near Stalybridge 442; at Highgate 443
,, Ligustri, agamogenesis in 356
Spider or mouse? 185, 198
Spider, does it eat its own web? 100; beautiful, from Syra 252
Spiders, gregarious, of Paraguay 19, 65; bees deluded by the colour 315
Stauropus Fagi at Darenth Wood 147; on the Cotswolds 320; at Ipswich 416; in Gloucestershire 417
Sterrha marginata 153
,, sacraria at Shirley 416
Stigmonota Weirana, economy 79
Strychnia and camphor crotchets 228, 245, 263, 276

Stylopites, monograph 398
Sugar in July 164
Sugaring, nights for 276; for moths 291
Sunius neglectus 86
Syrphus Ægyptius 274
„ interrumpens 273
„ latiusculus *id.*
„ turbidus 274

Tabanus nigrifer 255
„ pallescens 256
„ politus *id.*
„ terminalis 255
Tape-worm in the biliary ducts of salmon 407
Tæniocampa leucographa, description of the larva 141
Tenacity of life 406
Tephrina destituta 153
Thecla Betulæ, description of the larva 137
„ Quercus 242; in Ross-shire 265; does it ever remain in the pupa state for a year? 355
„ W-album at Bristol 410
Thera firmata in October 459
Timarcha tenebricosa 311
Tineina, breeding 44
Tinker, death of Mr. Jethro 284
Tipula oleracea 312
Tithonus and Comma in Shropshire 213
Tryphæna Curtisii, larva 223; bred 355
„ fimbria, immense numbers 148
„ subsequa near Birmingham 172; at Wareham 179
Triplax ænea 7
„ Lacordairii *id.*
„ melanocephala *id.*
„ rufipes 8
„ russica 7
Tsetse fly 217, 283, 289
Turnip weevil 60

Ulidia rufifrons 345

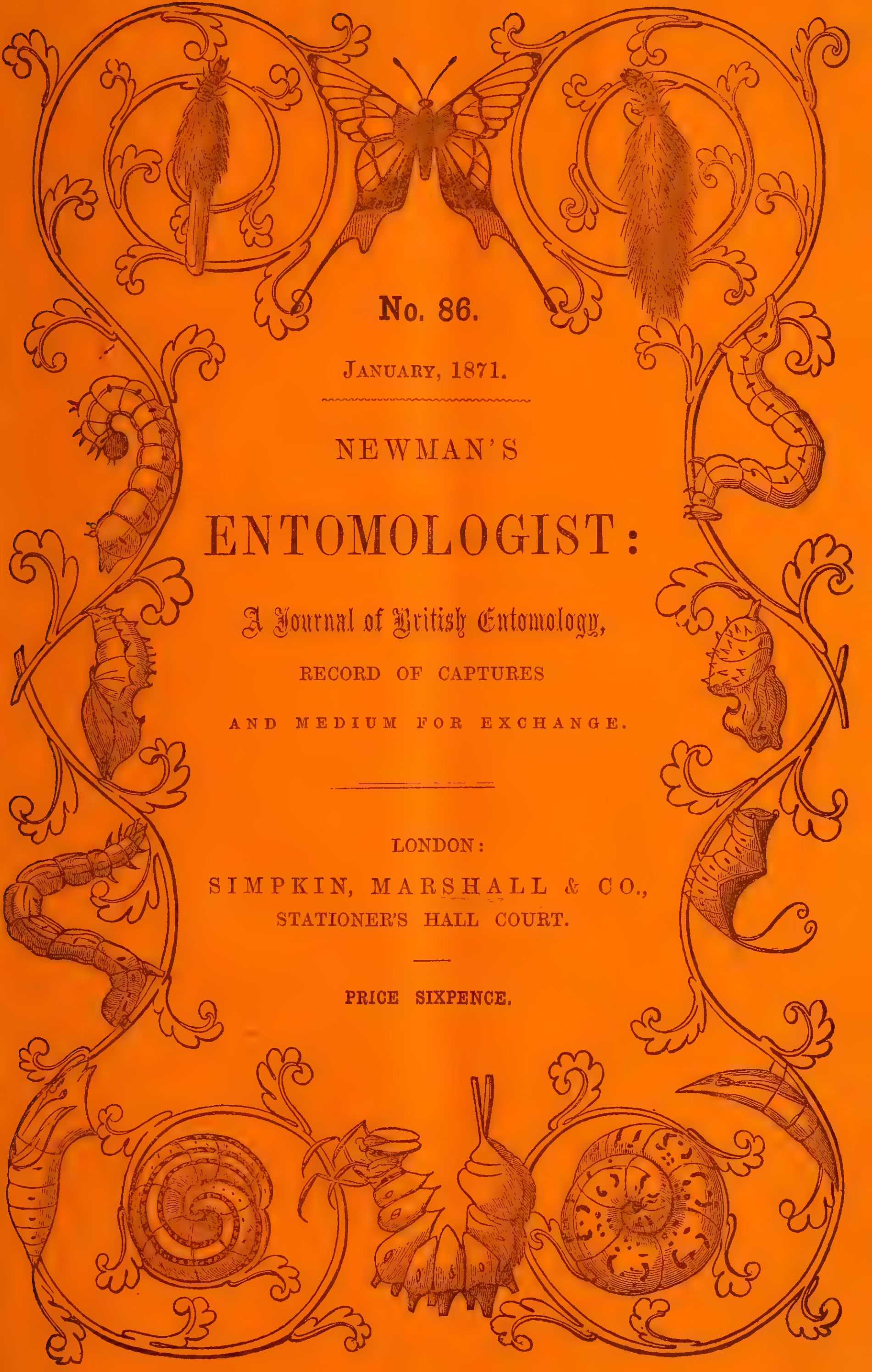
Vanessa Antiopa at Rochester 170; at Cheltenham 173; larva 211; near Sevenoaks 317; variety 423
„ Atalanta, imago with head of larva 268
„ C-album at Cambridge 294
„ Io, singular variety 142
„ Polychloros at Anerley 81; life-history 158; impregnation 178; in abundance 294
„ Urticæ 252; parasites on 166; small specimens 371
Venilia maculata, variety 415

Wasp's larvæ and pupæ destroyed by a Dipterous parasite 237
Weevil, turnip 60; pea 117; bean 246
Weevils of wheat 110
Wencker, M. 376

Xanthia cerago 103
„ gilvago at Epping 420; at Coombe Wood 444
Xylina conformis 419
„ ? infusa 129
„ petrificata, larva 216
„ semibrunnea 161
„ Zinckenii at Darenth 204
Xylomiges conspicillaris at Malvern Link 79; breeding 317
Xylophasia Zollikoferi a British insect 29

Ypsipetes ruberata 105; in Scotland 366

Zeuzera Æsculi, young larvæ 424; breeding 456
Zeuzera, rearing from the egg 373
Zygæna Filipendulæ, variety 427; in October 443



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JANUARY, 1871.

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THE ENTOMOLOGIST.

No. 86.] JANUARY, MDCCCLXXI. [PRICE 6d.

Description of the Larva of Tryphæna Curtisii.—I am by no means certain what is the natural food of this species; but in confinement it feeds freely on Plantago lanceolata (narrow-leaved plantain) principally during the night, resting in a perfectly straight position on the leaf-stalk during the day, or even concealed beneath the surface of the ground. The head is rather narrower than the 2nd segment, and is porrected in crawling on the same plane as the body; it is highly glabrous, and emits a considerable number of soft flexible hairs directed forwards; the face is flattish, and there is no perceptible notch on the crown: the body is almost uniformly cylindrical; the three thoracic segments are however decidedly more slender than the rest, especially when elongated in the action of crawling; they are also transversely wrinkled, each being divided into four sections, in addition to the fold or quasi-section which intervenes between each two segments; the 12th segment is dorsally elevated, and the raised portion terminates posteriorly in a square and sharply-defined truncature; there is a lateral skin-fold below the spiracle, but not very conspicuous; the anal claspers are stretched out behind when at rest, and extend decidedly beyond the anal flap: when annoyed the larva falls from its food-plant in a compact ring, and remains in that position a considerable time perfectly motionless: in this position the slender hairs scattered over the body become more perceptible, but are never very conspicuous; the skin is velvety. The colour of the head is a transparent palish umber-brown, but variegated and reticulated with rich sepia-brown; these darker reticulated markings form two quasi-crescents, the convexities of which are placed back to back on the middle of the face, and two other somewhat similar but smaller markings on the sides of the cheeks scarcely perceptible from above; the ocelli are of the same dark colour as these facial markings: the colour of the body varies in different individuals; it is generally umber-brown, with a slightly darker broad dorsal area intersected by a very narrow medio-dorsal paler stripe; the dorsal area is divided into compartments, corresponding with the segments, and each of these compartments is dilated before, contracted behind, and concave on the sides; each compartment is also margined by a paler line: the 1st, 11th, and 12th segments differ considerably from the rest; the 1st has a flattish rather glabrous and slightly darker dorsal surface bisected by a pale line continuous with the medio-dorsal stripe; the 11th has its dorsal compartment restricted and rather rounded behind, and its sides and posterior margin, except in the middle, deep sienna-brown; the same character, but more conspicuous, is observable of the 12th segment, the truncated posterior margin of which is very dark, and the dark colour is rendered still more conspicuous by a light rufous border; on each side is a lateral stripe, including the spiracles, which are white; the dorsal boundary of the side stripe is very vague, the ventral boundary more sharply defined, and rendered more conspicuous by its proximity to a pale lateral skinfold; the anal flap is decidedly darker than the ground colour; and, in addition to these more decided markings, every part of the dorsal and lateral surfaces is sprinkled over with dots and lines; the ventral surface, legs, and claspers are paler.

I am indebted to Mr. Norman, of Forres, for a liberal supply of the larva, which, it must be admitted, much resembles that of Tryphæna orbona; but that similarity pervades all the Tryphæna larvæ I have examined.

The perfect insect is admirably figured in Curtis's beautiful 'British Entomology,' fasc. 348, dated 1st March, 1831, under the name of Tryphæna consequa, or Bute Yellow Underwing, but, as it certainly is not the Noctua consequa of Hübner, I at once suggested that it should receive the name of the talented artist who described it, and who has figured it so beautifully. Mr. Curtis possessed but a single specimen, taken by himself on the heath at the back of Mr. Kean's house, in the Isle of Bute, on the 27th July, 1825. Mr. Norman has taken it more abundantly during the past summer, near his residence at Forres. Mr. Curtis describes it in these words:—

"Brown, palpi reddish, crown of the head pale; superior wings comparatively short, narrow at the base, and considerably broader at the apex, with the costa reddish; two pale strigæ towards the base, an oblique, oval, and an auriculate stigma, with pale margins and reddish centres towards the middle, beyond which are two pale sinuated strigæ, the nervures between them pale, and bearing a row of dots as well as the posterior margin: inferior wings orange, fuscous at the base, the nervures fuscous, a black fimbria, narrow at the anal angle, curved above and reaching the centre where it forms a crescent, the extreme edge indented and not touching the margin; abdomen cinereous; the sides and apex ferruginous."—*Curtis*, l. c.

Mr. Curtis, well aware of the similarity of this species to the familiar Tryphæna orbona, thus differentiates them:—

"That my specimen is distinct from our other species there is no doubt, for the superior wings are formed more like those of Cerigo texta, the stigmata are larger than in T. orbona, the fascia of the inferior wings is broader, and the superior margin beneath is black and not rosy; in colour it most resembles the N. consequa of Hübner (Noct. tab. 23, fig. 105); his N. subsequa is more like N. orbona."

In the 'Insect-hunter's Year-book' for 1870 I have taken considerable pains to differentiate this species from Tryphæna orbona, with which it may very excusably be confounded by those who do not possess a series of both. There are now in the possession of myself and others a great number of chrysalids, and, when they emerge, some of them will infallibly reveal their ancestry if they be really the descendants of Tryphæna orbona. I notice that the very variability of these two species has been urged as a plea for reuniting them as a single species; but this appears to me quite as cogent a reason for keeping them separate, since I have often observed that two cognate species may, and frequently do, exhibit an infinity of variations.—*Edward Newman.*

"*Ephyra strabonaria of Zeller.*—Intermediaire entre Punctaria et Trilinearia mais plus voisine de cette dernière: 25 mm. Ailes d'un carné-jaunâtre, teinté de rose chez les exemplaires frais, sans atomes. Les points des deux series ordinaires sont liés et forment deux lignes denticulées. L'ombre mediane est bien distincte, mais ne forme pas une ligne tranchée; alle passe, aux secondes ailes, sur un point cellulaire blanc, ovale, ocellé. Les dessins du dessous sont a peu près nuls. Le front est d'un brun cannelle très pâle. Les ailes ont la forme de Trilinearia — ♀ semblable."—*Guenée*, *Uranides*, *et Phalænites*, tome i. p. 412.

During the autumn Mr. George Parry, of Canterbury, sent me for examination several specimens of the insect thus described by Guenée. Mr. Doubleday, having seen them, very decidedly pronounces them to be a second brood of Ephyra trilinearia.—*Edward Newman.*

Entomological Notes, Captures, &c.

Colias Edusa at Huddersfield.—A man named Bennett took a male specimen of Colias Edusa, at Shipley, near Huddersfield, during the present season. As the insect was one he was unacquainted with he put it away, and gave it to me, unset, in a lucifer-match box when I called on him some days ago. Its occurrence here is very rare; I know of no previous capture since 1859.—*Geo. T. Porritt; Huddersfield*, *December* 14, 1870.

Epinephele Hyperanthus.—I have been so much engaged lately I have been unable to find time to write you on the subject of Epinephele Hyperanthus. I hope next season to send you specimens, to convince you about the ocellated spots on the upper side of the wings of the female being "distinctly marked." The specimens at present in my cabinet are all old and faded, or I would have sent some now. Possibly I should not have said the markings were *quite* as distinct on the upper as on the lower surface of the wings had I taken the trouble to look at the specimens in my cabinet; but my remark was only made for the purpose of drawing your attention to what I imagined was an oversight on your part, and I did not at all think you would dispute my statement. I see my friend Dr. Livett, of Wells, has written (in this month's 'Entomologist') confirming my remarks, though, like myself, he is unable to send you fresh specimens in proof. If I remember rightly there is a fine series of varieties of this species in the British Museum collection; and I have no doubt, if you see them, you will find some of them distinctly marked on the upper side.—*Alfred E. Hudd; Stapleton Lodge, Stapleton Road, Bristol, December* 14, 1870.

Melanthia Rubiginata var. *Plumbata, &c.*—This species is very common, as I have caught three dark, two black, and one not quite black; I could have caught hundreds of the true one as they were so plentiful. I have only met with them in one place about here. I have also got a brownish yellow specimen of the large Emerald (G. Papilionaria) this year, on the 4th of July, hanging on the bough of a tree, at evening. A brother entomologist, at Bolton, told Mr. King, of London, and he said it was done with poisoning it; but I had no poison with me then, but had pinched it under the wings. It is not a faded specimen, as it looked quite fresh, and the antennæ and legs are the same colour. Last year I caught two of the Comma butterfly on the valerian and peaches. I have taken Agrotis saucia on ivy bloom, and A. suffusa this autumn.—*W. R. Kefford; Lathom Gardens, Ormskirk, Lancashire, December*, 1870.

Phibalapteryx conjunctaria, &c., near Newcastle.—The best of my captures during the past season was one specimen of Phibalapteryx conjunctaria (Polygrammata of 'British Moths,' 175, and 'Doubleday's List.'): I took the insect at Newbeggen-by-the-Sea, during the last week of July, flying at dusk, near some swampy ground on the moor. In your 'British Moths' you name March and September to be the times of its appearance; probably it is only single-brooded in this part of the country. I saw, but did not capture, D. Galii flying on the 15th of July, much earlier than it has made its appearance in the south this year. Two members of our Club found larvæ on the coast, which are now in pupæ. About a dozen N. Elymi were taken in July on the coast, near South Shields, by Mr. Eales of that town. I have noticed the occurrence of a second brood of V. Urticæ this year: I found the small larvæ during the last week in May, and again, on the same bed of nettles, on the 9th of August, nearly full fed; the butterflies were on the wing late in September. The Naturalist's Field Club, of this town, had a day at Castle Eden Dene in the beginning of June: I only succeeded in capturing one A. Blomeraria. I was afterwards told we were a fortnight too early for it. Two or three

S. lunaria were also taken by other members of the Club.—*W. Maling; 15, St. Mary's Terrace, Jesmond Road, Newcastle-on-Tyne, December* 5, 1870.

Chariclea Delphinii in Norfolk Crescent.—About six years ago I took a Noctua in the garden of Norfolk Crescent, which order of insects I do not collect. On showing it to a collector he told me it was Chariclea Delphinii, and asked me to forward the fact to your well-known magazine.—*T. A. Taylor; 23, Norfolk Crescent, November* 30, 1870.

[Probably introduced by the transmission of European plants to some nursery garden.—*Edward Newman.*]

Strychnia and Camphor Crotchets.—A few crotchets have possessed me, which I much desire to have either dispelled or confirmed by yourself or some of the other entomological luminaries that avail themselves of your pages. Crotchet 1:—Why has not strychnia been adopted as a killing agent for lepidopterous insects? I propose to use a solution of it in spirit, for the purpose of killing insects by the usual thoracic stab: the wonderful power of this poison to destroy insect-life is evidenced by its extensive use in the very diluted form of fly-paper; but my crotchet is that, by its diffusive power, this poison, when thus introduced into the thorax of a living insect, would effectually ward off all future attacks of mites or other cabinet-pests from any portion of a specimen so killed, without recourse being necessary to bichloride of mercury, camphor, oil of cajeput, or any of the other preventives usually adopted. I have heard it asserted that the thousandth part of a grain of strychnia will kill a frog; if so, who can calculate how small a portion will kill or disagree with a mite. Doubtless the consequent tetanus or extreme rigidity of the specimen may be raised as an objection to this mode of killing; but immediate setting, the laurel-jar, or the damp-sand box will meet that difficulty; and if my crotchet of the diffusive power of the poison be well founded, it is worthy of a trial. Crotchet 2:—Grease, although the delight of cooks, is a terrible drawback to the pleasures of an insect collector; and I cannot but think the remedies hitherto proposed almost transcend the disease. It has occurred to me that a small orifice might be made in the abdomens of oleaginous species, and some chemical absorbent applied so soon as the insects leave the setting-board. I am trying experiments in this direction, and I should wish for assistance from some of your scientific contributors; all will admit that, in such case, "prevention is better than cure." Crotchet 3:—Might not camphor, in our cabinet-drawers, be superseded by a tuft of cotton-wool with a drop or two of the oil of cajeput on it: the odour of this essential oil is less disagreeable, and, I believe, is quite as efficient as camphor; it is less fugitive; and last, but not least, costs a good deal less than camphor.—*S. Radcliff Fetherstonhaugh; 17, Eccles Street, Dublin, December 7, 1870.*

[Crotchet 1:—With regard to strychnia I doubt whether there is any advantage in employing it, when our means of killing insects are so perfect and our choice so extensive. A glance at Mr. Greene's invaluable 'Companion' will satisfy every enquirer on this point. Crotchets 2 and 3 I combine, because the subject of discussion seems, of necessity, one and the same. Camphor and grease are inseparable, cause and effect: you cannot use camphor without having grease: it is better to have neither. On the continent camphor is rarely used; in England, Mr. Doubleday's collection, the neatest and cleanest I have ever seen, is *never* camphored: I should as soon expect to see him pour train-oil into his drawers as introduce a lump of camphor. The collection under my own care is never camphored *now*; but it was formerly, as sodden patches of grease in the drawers abundantly testify. I assume that camphor is intended as a preventive against the attacks of Acari, Psoci, Ptini, and Tineæ, all of which delight in the mortal remains of insects; but I am not, at present, a believer in spontaneous generation. I do not see how a brood of mites can enter and establish themselves in my drawer of Notodontæ, *sponte sua*, any more than a herd of elephants can, *sponte sua*, make their appearance in my cockney garden, where they would, I think, be inconveniently crowded, should such a spontaneous generation take place. This is one of *my* crotchets, although I am fully aware the "British Association for the Advancement of Science" bids fair to rule otherwise. Well, then, not believing the tribe of mites can come of their own accord, I take as much care as I can not to introduce them by any act of my own. Supposing some kind entomologist makes me a present of insects from a *mitey* collection I transfer them, box and all, to the oven, and allow them to remain there in quarantine until all chance of communicating the disease has been baked out. In my cabinets, constructed by Benjamin Standish on an antediluvian plan of my own, there is a cavity all the way round, technically known as a camphor-cell, and camphor it formerly contained; but when it became manifest that camphor was neither ornamental nor useful,—in fact, that it was highly deleterious to Lepidoptera, —camphor was ejected by a summary process, and the cells stuffed full of calico-rags, on which benzole is occasionally poured. I have no objection to cajeput, and the scent is more pleasant than that of benzole; but the effect of cajeput on a living Atropos pulsatorius is less rapid. Between the camphor era and the mercury era Mr. Doubleday always used oil of cajeput, but now he invariably touches the underside of an insect with a weak solution of bichloride of mercury in alcohol: this process effectually prevents grease, mites or mould. In using this solution some care is requisite that it be not made too strong, for this is possible, since the insect may be disfigured by a slight change of colour or by a crystallized coating of the bichloride. In order to test the strength of the solution a sheet of black or dark paper should be at hand, and a portion of the solution laid on it with a camel's-hair brush; if there appears the least coating of white on the paper add more alcohol, and continue adding and testing the solution until it will dry and leave no mark whatever: it is then fit for use. I shall be very pleased to receive and to publish the opinions and experience of others. —*Edward Newman.*]

Lepidoptera of Kircudbrightshire (continued from p. 220).

X. Cerago. August. Common.

X. Silago. August. One, by beating.

X. Ferruginea. September. Not common.

C. Trapezina. August. Common.

D. Capsincola. July. Larvæ. Abundant.

P. Chi. August. At rest, and at sugar. Not rare.

A. Aprilina. September. Pupæ. Abundant at oak, always near surface.

P. Meticulosa. July. Common.

E. Lucipara. July. Not common.

A. Herbida. June. One, by beating.

A. Nebulosa. June. Common. At sugar.

H. Dentina. June. Not rare.

H. Oleracea. June. Common.

H. Pisi. August. Larvæ. Never on bracken; on sallow, broom, sedge, grass.

H. Thalassina. June. Common.

C. Umbratica. July. Not rare.

A. Myrtilli. June. One, flying over heather.

H. Uncana. August. Cloke Moss. One, too late to be good.

P. Chrysitis. August. One or two, at flowers.

P. Iota. August. One, at flowers.

P. Gamma. August. Common.

G. Libatrix. August. Not rare. Larvæ, on aspen.

A. Tragopogonis. July. Common.

M. Typica. July. Common. At sugar.

M. Maura. July. Common. At sugar.

E. Mi. August. The larva has a very queer appearance when at rest.

Among the Geometræ I did but little. The following are a few of my captures:—

U. Sambucaria. July. Not rare. At dusk.

M. Margaritaria. June. Common.

B. Repandaria. July. Common.

P. Cytisaria. September. Young larvæ, on broom.

A. Ulmata. June. Not rare.

E. Pulchellata. August. Larvæ, on foxglove.

M. Rubiginata *var.* plumbata. July. One.

E. Mensuraria. August. Common.

E. Palumbaria. August. Common.

A. Plagiata. August. Common.

C. Obliquaria. September. Larvæ, not rarely on broom, require patient beating; began turning about the 7th September.

O. Chærophyllata. July. Common.

I gave but little attention either to the Pyralites, and so only took a few.

H. Nymphæalis. August. Not common. Cloke Moss.

H. Stagnalis. August. Not common. Cloke Moss.

B. Urticalis. June. Common.

S. Ferrugalis. August. Not common.

H. Nimbella. August. Larvæ. Abundant, on camomile, near the sea.

C. Culmellus. July. Common.
C. Pascuellus. July. Common.
C. Hortuellus. July. Common.
C. Tristellus. July. Common.
C. Pinetellus. July. One, at light.
C. Perlellus. July. Common.—*W. Douglas Robinson; Almorness Castle, Douglas, September* 15, 1870.

Annual Exhibition of the Haggerstone Entomological Society.

A most interesting exhibition of insects took place at the above society's room on the evenings of the 17th and 18th of November last. Six o'clock was the time announced for the opening of the exhibition; but such was the interest evinced on both evenings, by persons desirous of inspecting the entomological treasures, that some time before that hour visitors began to arrive, and, judging from the crowded state of the room during the two exhibition-nights, it is not at all improbable (should these annual exhibitions be continued) that, at no very distant date, a much larger room will be required, in order to give sufficient accommodation to the visitors, the exhibition this year far excelling those of the two previous years, both as regards the rarity and beauty of the insects shown, the three tables arranged down the centre of the room being entirely covered with glass-cases and boxes containing insects of all orders. As might have been expected the Macro-Lepidoptera were the more numerously represented; the cases of Messrs. Barlow, Bryant, Bush, Clarke, Davis, Harper, Jackson, Lomier, Meek, Raine, Smith and others contained many beautiful and well-set insects. Among the rarer Lepidoptera submitted to the inspection of the visitors were Pieris Daplidice, Argynnis Lathonia, Vanessa Antiopa, Lycæna Acis, Sesia chrysidiformis, S. Philanthiformis, Ophiodes lunaris (the second known British specimen, and captured by its owner, Mr. Smith, at West Wickham Wood, in 1861), Pachnobia alpina, Notodonta bicolor, Xylina Zinckenii, Dianthœcia capsophila, D. irregularis, D. Barrettii, Lythria purpuraria, Agrophila sulphuralis, Noctua ditrapezium, P. obductella, Dicrorampha flavidorsana, and many others. Many beautiful varieties were shown: those of Argynnis Adippe, Abraxas grossulariata, Venilia maculata, and a remarkable variety of Ypsipetes elutata, captured in Scotland, being the most conspicuous. One specimen of Vanessa Atalanta was exhibited, in which the butterfly possessed the head of the larva, the insect in all other respects being normal. The cases of preserved larvæ, exhibited by Messrs. Clark, Davis, Lomier, and Raine gave much satisfaction; the contents of Messrs. Clark and Raine's cases were highly interesting and instructive, exhibiting as they did the whole economy of their insect occupants.

The Micro-Lepidoptera were represented by Messrs. Eedle, Gates, Healy, and Smith, Mr. Eedle exhibiting many beautiful Tortrices and their varieties. In representing the Tineina Mr. Healy showed a book-box, in which were contained representatives of every family and almost every genus of the Tineina, together with a number of Coleophora cases.

The respective orders of Coleoptera, Hymenoptera, and Diptera were represented by the exhibitions of Messrs. Healy, Stoay, and Lomier. Mr. Healy exhibited examples of the various Tenthredoes he had captured during the past two seasons; also a book-box containing the life-histories of nine leaf-mining Micro-Hymenoptera, namely:—Phyllotoma Tormentillæ, P. melanopyga, P. mellita, P. microcephala, Druida parviceps, Fenusa pumila, F. fuliginosa, F. Ulmi, and F. pygmæa, showing at a glance the economy of each species. Mr. Lomier's Hymenopterous and Dipterous specimens occupying five cases; all the insects in the seven boxes containing Hymenoptera and Diptera, having their Latin names attached to them.

Mr. Cooke, of Oxford Street, kindly lent the Society some splendid specimens of exotic insects, the extreme beauty of the butterflies putting the lady visitors into quite a flutter of delight. To suit all tastes a few cases, of what is known as Ornamental Entomology, were hung on the walls of the Society's meeting-room. The exhibition passed off in a most quiet and orderly manner, and, in spite of the room being at times inconveniently crowded, not an insect received the slightest injury.

Extracts from the printed Proceedings of the Entomological Society, November 7 and 21, 1870.

Deilephila Galii and Chærocampa Celerio.—Mr. M'Lachlan exhibited coloured drawings by Mr. Buckler of the larvæ of Deilephila Galii and C. Celerio. Of the former no less than sixteen different varieties were represented, all found during the present year.

Nonagria brevilinea.—Mr. Bond exhibited specimens of Nonagria brevilinea, of which a dozen were taken by Mr. G. H. King, at sugar, in the first week of August, 1870, at Horning Fen, Norfolk. The hitherto unique specimen was captured by Mr. Fenn at Ranworth, on the 4th of August, 1864.

[Nonagria brevilinea is figured at p. 271 of Newman's 'British Moths,' from Mr. Fenn's specimen, taken 4th August, 1864. I may add that my friend Mr. Doubleday has seen Mr. King's more recent specimens, and is unable to refer them to any previously described species.—*Ed. of 'Entomologist.'*]

Leucania albipuncta.—Mr. H. Vaughan exhibited Leucania albipuncta from Folkestone; and two remarkably dark varieties of Tryphæna orbona, from Mr. Norman, of Forres.

[Leucania albipuncta is figured and described at p. 475 (No. 438*) of Newman's 'British Moths;' and three specimens are mentioned as having been taken in England: the *first*, at Folkestone, on the 15th of August; the *second*, in the second week of October, at the same place; and the *third* was obtained by the late T. H. Allis, of the Yaxley collectors. The dark variety of Tryphæna orbona, so called, is the Tryphæna consequa of Curtis, the Tryphæna Curtisii of Newman: the larva is described at p. 223 of this number of the 'Entomologist.'—*Editor of 'Entomologist.'*]

Meloe rugosus.—Mr. F. Smith, referring to his previous remarks on Meloe rugosus (Proc. Ent. Soc. 1869, p. xx.), mentioned that he had again visited Prittlewell this autumn, and taken twenty-five specimens of this beetle; they were found under the herbage, and never came into daylight, only the tip of the abdomen of the female being visible; the males appeared to fight furiously with one another, not only when in confinement, but in a state of nature; most of the females were full of eggs, and Mr. Smith placed two in a flower-pot, in the hope of breeding the species; instead of depositing eggs, they had burrowed into the earth and there remained, so that it became a question whether they do not hybernate in the ground, and lay their eggs in the spring, at a time when there would be a better supply than in the autumn, of eggs and larvæ of the Anthophora. Prof. Westwood said both sexes of Meloe violaceus were found in the spring; and suggested whether these had hybernated underground. Mr. Pascoe mentioned that near Narbonne he had once seen a dozen specimens of Meloe maialis impaled on Cactus opuntia, and as they were quite uninjured except by the spines of the Cactus, the impalement could not have been the work of shrikes.

Anobium paniceum.—Mr. Dunning exhibited Anobium paniceum, both larva and imago, living in and consuming Cayenne pepper; and read the following note respecting it:—"In Kirby and Spence (Introd. i. pp. 196, 199, ed. 1843) it is mentioned that Anobium paniceum has been known to consume Cayenne pepper. On the 5th April, 1847, Mr. W. W. Saunders exhibited to this Society a bottle of capsicum from Bombay, which was greatly infested by Lasioderma testaceum; and it is added when Kirby and Spence stated Cayenne pepper to be subject to the ravages of Anobium paniceum, that species was 'probably mistaken by them for the former insect, which it greatly resembles.' (See Proc. Ent. Soc. 1847, p. viii.) It is clear that this passage means the reverse of what is said—that Lasioderma was mistaken for Anobium, not Anobium for Lasioderma. The authority for Kirby and Spence's statement is Mr. Raddon, who, on the 1st of January, 1838, exhibited to this Society 'a quantity of Cayenne pepper, in which a number of specimens of Anobium paniceum had been reared.' (See Proceedings, p. lxi.) I have now the pleasure of exhibiting larvæ and beetles in Cayenne pepper, forwarded to me in August from Woolston, near Southampton; they were described as 'sent over in some Cayenne pepper, and, much to the disgust of the village grocer, they bred and multiplied, the beetles boring holes in the drawer in which the pepper was placed, previous to the discovery of the inmates.' Notwithstanding the doubt expressed in 1847, I venture, in corroboration of Mr. Raddon's observation, to exhibit these beetles as Anobium paniceum."

[Anobium paniceum is figured, both in its larval and perfect state, at p. 162 of the 'Entomologist' for September, and some details given of its injurious effects on tea. The grubs were found, immediately the chests were opened, upon arrival: the package consists of a wooden exterior, inside of which is a leaden case, in which the tea is put and soldered down, and on the top of the tea, where the lead is soldered, there is a covering of paper: when the lead is cut open the grubs are found adhering to the paper and in the tea. Hundreds of chests have been found, during the past year, to be infested with this grub.—*Editor of 'Entomologist.'*]

Chlorops lineata.—Mr. Bond exhibited specimens of a small Dipterous insect, Chlorops lineata, and read a letter respecting it from Mr. J. Brown, of Cambridge. In the month of September a room, in the Provost's Lodge at King's College, was found "literally swarming with them; the ceiling and windows were covered; there must have been millions of them:" they were said to occur regularly every season, and to have been noticed by the late Provost, Dr. Thackeray (who died in 1850). Mr. F. Smith mentioned that he had received half a dozen communications during the autumn respecting swarms of this insect. Mr. Stainton enquired how and why it was that an insect which feeds on grasses or on vegetable substances is found in houses? Prof. Westwood thought the long hot summer and dry autumn might account for the unusual prevalence of this species during the present year; as to its getting into houses, he thought it was with a view to hybernation. Mr. Jenner Weir thought it was only for temporary shelter, on the first approach of cold weather.

Cynips Renum.—Mr. Albert Müller exhibited some reniform spangles on the under side of oak-leaves, found near Shirley, on the 16th October last, and produced by Cynips Renum (Hartig, M.S.): also pea-galls (about seventy-five in number) of Cynips agema, on the under side of the leaves of an oak seedling of two or three years' growth. Mr. Müller observed upon the fact of a Cynips attacking so young and healthy a plant.

Blennocampa Cerasi.—The Secretary read letters from the Rev. W. H. Wayne, of Much Wenlock, Shropshire, respecting the injury caused in July last to his plum, cherry, and pear trees by a small gelatinous grub, doubtless Blennocampa Cerasi (Tenthredo Cerasi, *Linn.*). It was first observed three or four years since in small numbers on a plum tree; in 1869 they caused the fall of nearly all the leaves of a pear tree, and the total ruin of the fruit; in 1870 two large pear trees were totally spoilt, and not only pears, but large crops of plums and cherries were rendered worthless.

[Although I suggested in the 'Field' newspaper that this insect was the Blennocampa Cerasi, I expressed a doubt, because I had not succeeded in breeding the perfect insect. I assume Mr. Dunning has been more fortunate, or he would scarcely use the word "doubtless."—*Editor of 'Entomologist.'*]

Female of Psyche reticella.—Mr. Bond exhibited both sexes of Psyche reticella (*Newman*), taken near Gravesend in 1870, by Mr. Button, the female being now for the first time known: in colour it is quite different from the female of any other British species of Psyche, being of a clear yellowish horn-colour, with bands or rings on the body of a dark vandyke-brown or nearly black; in fact, it is very similar when alive to a small larva of Euchelia Jacobææ, but after death it becomes nearly black.

Acidalia strigaria, n. sp., *and P. obductella.*—Mr. Bond also exhibited Acidalia strigaria, *Hubn.*, from Gravesend, a species new to the British list; and Pempelia obductella, *F. v. R.*, from Norfolk; these were also taken by Mr. Button during the present season.

Wasp's larvæ and pupæ destroyed by a Dipterous Parasite.—Mr. F. Smith exhibited some comb from a wasp's nest sent to him in October from Gloucestershire, the larvæ and pupæ in which had been destroyed by a Dipterous parasite, Phora florea: on a single larva or pupa of the wasp, for both were attacked indiscriminately, there were in some instances twelve or fourteen larvæ of the Phora, and the whole inside was consumed, leaving a mere shell, like the cast-off skin of a shrimp; out of 200—300 cells, not more than a dozen wasps escaped. Mr. Verrall mentioned that he had once put a hornet in a box, and on looking at it after a considerable time, found four or five specimens of a Phora had emerged; so that all three stages of larva, pupa and imago seemed to be liable to the attacks of Phora. Bouché also had recorded the breeding of Phora from a species of Crabo.

Phlœotribus Oleæ near Halifax.—Prof. Westwood mentioned that he had recently been breeding in numbers the continental Phlœotribus Oleæ from an ash tree growing near Halifax. The tree, however, was imported from France, so that the beetle could not yet be regarded as British, though it would doubtless become naturalized here. He had dissected it, and found that it really belonged to the Tomicus group.

Ægosoma scabricorne.—Mr. Müller exhibited, in spirits, a full-fed larva of Ægosoma scabricorne: and a piece of the bark of a lime tree, showing the exit-hole of the imago. On St. Peter's bastion at Basle there were formerly some lime trees, and on the 8th of March, 1868, one of the old trees was blown down during a hail-storm; the larvæ thrown out of the shattered trunk were picked up by Herr Stehelin Imhoff, and that exhibited was one of them. In the spring of 1869 all the trees were felled, and in one, of much smaller size than that blown down in 1868, were a considerable number of the larvæ in all stages of development. The larva is of the usual Prionid form, and is described by Mulsant in Ann. Soc. de Linn. de Lyon for 1855, reprinted in his Opusc. vi. 46. The habit of the beetle was to fly in the twilight, and rest during the day on the bark, by preference in a cavity sheltered from the sun: it occurred in July, August, and September: in July, 1865, Mr. H. Knecht took thirty-eight specimens at Basle; in August, 1866, twenty-five specimens; whilst in 1868 only a single specimen was captured, on the 8th of September. At the same spot, Osmoderma Eremita occurred both in 1865 und 1866; and in the latter year, Aromia moschata was plentiful.

Epinephele Tithonus and H. Comma in Shropshire.—Seeing a statement of yours, in your 'British Butterflies,' that you had no record of E. Tithonus in Shropshire, I beg to say that I have taken it here, round Shrewsbury, the last four or five years in great plenty; and last year it absolutely swarmed here, as it did also the preceding year. With respect also to Comma I caught several specimens in 1864 and 1865; since then I had not seen it till this year, when I took three very fine specimens, and saw several others: two of the specimens were taken on July 6th and September 24th respectively, there being several fine warm days of sunshine at the date.—*George W. Oldfield; Shrewsbury, December* 19, 1870.

THE ENTOMOLOGIST.

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Notes on Gall-makers and their Parasites. By HENRY MONCREAFF, Esq.

[THIS paper has been in my hands ever since September last. I thought it best to wait until Mr. Walker had fully determined the species. With his usual kindness he has now done this, and his notes are incorporated in brackets. Mr. Walker has written on the same subject in the January number of the 'Zoologist,' S. S. 2429: his paper is one of the most valuable contributions to Entomology that has been published for many years. He enters fully into the question whether these internal-feeding larvæ can possibly be phytophagous at one period and carnivorous at another; and alludes to the suggestions thrown out by American entomologists, and also gravely considered by some of our best English entomologists whether many of the Hymenoptera, long supposed to be parasites on gall-makers, are not really themselves the gall-makers.—*E. Newman.*]

I send for your acceptance parasites from several galls, &c.

No. 1. From stems of Festuca ovina: these parasites are very abundant. I have not yet reared the gall-maker. The galls on this grass are of two forms: the first very elongated —from this I have reared nothing but parasites; the second more rounded. In one of the latter I have detected a Cynips (?) larva: it will be curious if it should turn out that the ravages of the parasite cause the galls containing them to assume a different shape.

[Decatoma mellea of Walker, and Pteromalus fulviventris of Walker, both in abundance; and one specimen of Pteromalus Festucæ, *n. s.*, were reared, by Mr. Moncreaff, from stems of Festuca ovina.]

No. 2. From imbricated galls of Triticum repens (var. β. of Hooker & Arnott). The maker of this gall will also turn out to be a Cynips, I think, from what I can see of the larva.

I only discovered this gall a few weeks since; and have not, as yet, reared the gall-maker: it, no doubt, escapes late in autumn or in early spring.

[The insects produced were Isosoma hyalipennis of Walker and Bracon tenuicornis of Wesmael.]

No. 3. From boat-shaped galls, on the leaves of Prunus spinosus: in one of these I detected the dead larva of a Cecidomyia (?); the live ones had, no doubt, gone to earth to undergo their final change.

[Callimome macropterus of Walker was reared by Mr. Moncreaff from boat-shaped galls, on Prunus spinosus, probably made by a Cecidomyia.]

I have also reared out of the galls on Plantago maritima, Baris laticollis; from galls of Plantago lanceolata, Mecinus pyraster; from root-galls (?) of Sisymbrium officinale, Baris —— (?): there are hymenopterous parasites on all these to come out.

I send you specimens of the imbricated galls of the couch-grass, and galls of Plantago maritima. I shall be obliged if you will authenticate the *species of grass* for me, for I think that, if I am correct in the species (Triticum repens), it will eventually turn out that the galls exhibited at the meeting of the Entomological Society (from Ammophila arundinacea, collected by Mr. J. Traill, at Aberdeen) are made by the same species of gall-fly; and I do not think it is likely it would choose different grasses.

[The grass is Triticum repens.—*E. N.*]

Life-history of Mixodia Hawkerana.—The north-west corner of Hayling Island is a low-lying sandy flat, relieved at its western extremity by a few rather elevated sand-hills; and here, besides many other plants of great interest to the botanist, grows the sea-spurge (Euphorbia paralias) in great profusion. A space of about a mile in length and of varying breadth is thickly and most luxuriantly covered with it, although it grows in the bare sand. It is shunned by all animals, for the intense acrid juices render it totally unfit for food; and as its flowers produce no honey it is equally deserted by the Hymenoptera. I have for several years carefully searched among these plants for the larva of

Deilephila Euphorbiæ, but without success, never having seen the least trace of it. In fact I have found it to be deserted by every creature, with the exception of a small Tortrix-like larva, whose history I hear is not commonly known, and for that reason the following life-history may not be uninteresting to your readers:—The egg of Mixodia Hawkerana is scale-like, about half a line over, very pale brown in colour, and the surface of the shell is closely granulated. In April, May and August the egg is laid, in most instances singly, on a leaf of the Euphorbia; and in eight days the young larva emerges from the shell, and commences at once to eat its way through the leaf to the stem of the plant. As it goes on feeding, it separates leaf after leaf from their basis, and fastens them closely together by silken threads, and so forms for itself a tunnel, closed at the bottom but open at the top, and in this it remains feeding, quite concealed, until it is full grown. It is then about eight lines in length; colour of the head pale brown in front, darker on the crown; a delicate black V-like mark springs from the centre of the head and ends on each side of the mouth; plate on 2nd segment dark umber-brown, pale in front, very glaucous, divided down the centre by a milk-white dorsal line; body stout, tapering to each end, greenish brown in colour; on each segment are about ten black spots, from each of which grows a single hair; legs and claspers light green, striped with black. When the larvæ are about to change they spin close silken cocoons in their tunnels, and turn to pupæ there. In June the imagos are on the wing, and may be seen by hundreds at dusk flying about the spurge. A portion of the second brood appears in autumn, but the greater part of them hybernate in the larva state, in cocoons, on their food-plant. In April and May the larvæ are mostly found among the seed-umbels, and this is no doubt owing to the rapid growth of the plant breaking up their domiciles and forcing them upwards. In autumn and winter the larvæ are easily detected by the connate appearance of the tops of the spurge. In some seasons the larvæ may be found feeding from April to November. The spring brood is easily reared: gather the infested tops when the larvæ are nearly full fed, place the tops in a glass-covered flower-pot, and leave them until the imagos emerge in summer. — *Henry Moncreaff; Southsea, January* 16, 1871.

Entomological Notes, Captures, &c.

Satyrus Tithonus. — The occurrence of this species in Ross-shire is so startling that I venture to ask if Mr. Davidson is quite sure he has made no mistake. The most northerly localities hitherto recorded are Kirkcudbright, where Mr. Robinson (Entom. iv. 17) states it to be common, and Northumberland, where it seems to occur pretty regularly. Its occurrence in Shropshire is mentioned by Mr. Barrett, who found it at Troubridge; and Mr. Andrews, who took it at Newport.— *H. Jenner-Fust, jun.; Hill Court, Berkeley, January* 1, 1871.

Thecla Quercus. — Ross is a new locality for this species also, which has however occurred as far North as Argyleshire and Perthshire. I shall be very glad of any confirmation of Mr. Davidson's statements as to the occurrence of this species and S. Tithonus in Ross.—*Id.*

Food of Calocampa exoleta. — I bred last autumn a fine specimen of Calocampa exoleta, from a larva that I found feeding on Eryngium maritimum. Strange food for this species, is it not?—*H. Moncreaff; Southsea, January* 16.

Notes on the Food and Habits of the Genus Eupœcilia.— At page 158 of the 'Entomologist's Monthly Magazine' (No. 79) a most interesting article is commenced by our friend C. G. Barrett, upon the habits and food-plant of Eupœcilia Degreyana. He says, "Taking into account the usual habits of the larvæ of the genus, I feel no doubt that in this species it feeds in the seed-head of the plant; it must be confessed, however, that I have several times searched for the larva without success." Here our friend implies that the usual habit of this genus, as arranged in our books at present, is to feed in the seed-heads of flowering plants; and that some species do so is well known, but perhaps—nay, I feel certain—it is not so well known that there are other species in this genus at present which are so far from feeding in the seed-heads, that their habit is to feed upon the roots, one eating into the root, another eating under the cuticle near the crown, whilst a third eats much deeper down the root. It appears to me just possible that the idea that the genus fed exclusively in or upon seed-heads may have prevented our friend searching in quite as likely a place lower down the plant. I pen this note to prevent a possibly erroneous idea misleading other friends in the search for the larvæ of the little-understood genus Eupœcilia. — *C. S. Gregson ; Fletcher Grove, Edge Lane, Liverpool, January* 15, 1871.

Gelechia confinis of Stainton.—On perusing the 'Entomologist's Annual' for 1871 (page 98) I find an insect reported as a "new species in 1870," under the above name, which is evidently Gelechia stolidella of Gregson, published in the Rev. F. O. Morris's 'British Moths,' plate 108, fig. 1, and drawn from my Manx specimens: this species has long been separated from its congeners in my collection, and English specimens before me do not differ from the Manx ones. It is not pleasant to have so soon to destroy a part of the "very little work" which, according to the 'Entomologist's Annual,' has been done in Lepidoptera during 1870 ; but I feel sure I shall not be blamed for calling attention to this little oversight of work already done.—*Id. ; January* 21, 1871.

Peronea proteana of Herrich-Schæffer.—From the remarks on this species at page 92 of the 'Entomologist's Annual,' one would be led to believe we were just on the point of another muddle; but from my experience in breeding this group I feel I shall not have to add the proposed new name, —only to decide "which is what:" I have bred hundreds of the Peronea potentillana of Cooke from Comarum and Fragraria, yet never could separate the larvæ, or see them into ought else.—*Id.*

Is it possible to Drown a Fly?—Many persons, on reading the title of this letter, will be apt to exclaim, What a very stupid question! Nevertheless it is the logical sequence of some remarks which I find in a communication of Science-Gossip, on "Flies in Liquor," in which it is asserted, on the authority of Doctor Franklin, that some flies which had been drowned in a bottle of Madeira wine sent from Virginia to England, on being placed in the sun, revived and flew away. It appears that the flies must have been in the wine many months, and on the bottle being opened three fell into the first glass filled: these were exposed to the sun on the sieve which had been used to drain the wine from them, and in less than three hours two of them by degrees began to exhibit signs of life, and soon afterwards flew away. The Rev. Mr. Kirby says that "many have recovered after having been twelve months immersed." The writer of the note from which I quote says he himself saw a fly pass out with the first glassful of wine, from a freshly opened bottle of champagne, which fly (one of the common species) was laid on the table-cloth, and in fifteen minutes afterwards was seen to gradually raise itself and totter across the table.—'*English Mechanic and World of Science*,' *December* 16.

Quill Pens. — Many of our readers will remember the old-fashioned house in Cheapside, where, day after day, one or two men might be seen at work in the window, cutting quills into pens. Gradually the fact dawned upon the proprietor that a less expensive neighbourhood would suit him quite as well, and he migrated to Newgate Street. The charm, however, was broken, and he sold the business with the lease of the premises. A curious fact in Natural History came to light with the change of proprietary. The place swarmed with spiders and webs, both of which were encouraged, and the attempt to get rid of them was stoutly resisted by one of the old servants, who explained that the feathers of the quills harboured a peculiar highly destructive species of moth; these in turn attracted a peculiar species of spider which had a natural taste for young moths, and thus preserved the feathers.—'*Bookseller*.' I enclose a paragraph I have cut out from one of the daily papers. I should imagine it was exaggerated so far as the "peculiar species" was concerned, and probably only Tinea pseudospretella. Can you throw any light upon it in the 'Entomologist'?—*J. Cosmo Melvill, jun.; Manchester, December* 12, 1870.

Lepidoptera in Cornwall. — During the first three weeks of last July, Mr. L. Cumming and I took the following insects in the neighbourhood of the Lizard, Cornwall. Among the butterflies we got no rarities, but Aglaia, Ægon and Linea were all very common. Sesia philanthiformis I took flying briskly along the flowery earth-walls, and settling on the thyme and sea-thrift. S. ichneumoniformis was common, but local, its sluggish flight contrasting strongly with the brisk flight of Philanthiformis: both these species seemed partial to the neighbourhood of the cliffs: I never saw them fly except in bright sunshine, and they seemed most common in the forenoon. Mr. Cumming found a full-grown larva of Deilephila lineata feeding on dock, but it unfortunately perished in the act of turning to the pupa. We also took Stellatarum (abundant), Complana, Complanula, B. Trifolii (larva), Apiciaria, Pullata, Cytisaria, Vernaria, Immutaria, Alchemillata, Linariata, Galiata. We did not sugar, but the following Noctuæ came to light—Glandifera, Alsines, Lunigera and Serena; and Mr. Cumming took one specimen of Absinthii the day we left. Purpuralis, Cespitalis, Cingulalis and Punctalis were all abundant. Also Cerussellus (abundant), Inquinatellus, Perlellus, Sinuella and Nimbella (common). Marmorella (a few), Microdactylus, Tetradactylus (abundant), Phæodactylus (abundant in one cove by the sea). Considering the short time we spent at the Lizard, and that collecting was not our principal object, I think this list shows that the locality is well worth working.—*W. C. Marshall.*

Mr. Fetherstonhaugh's Crotchets, and Mr. Newman's replies thereto.—As to Crotchet No. 1, I quite agree with Mr. Newman. It seems to me impossible to devise a cheaper, simpler, or more effectual method of killing an insect than the stupifying it, in the first instance, with laurel-leaves, and afterwards piercing it with a quill or steel pen dipped in a saturated solution of oxalic acid. Here, unhappily, our agreement ends. Mr. F. objects to camphor, as having a disagreeable odour: "De gustibus," &c. To *me* the odour of camphor is delightful, and, at any rate, preferable to that detestable preparation called benzole. But Mr. N. objects to its use on very different grounds. "Camphor and grease," he remarks, "are inseparable—cause and effect; you cannot use camphor without having grease." I am not prepared to deny this; but I wish to ask Mr. N. whether he insists upon the converse of this proposition, *i.e.* that if there be no camphor there will be no grease? Scarcely, I think. He states that Mr. Doubleday uses a weak solution of bichloride of mercury dissolved in alcohol to the underside of the insect, and that this process effectually prevents grease, mites, or mould. I must demur strongly to this assertion, so far as *grease* is concerned. Take, for example, the genus

Leucania or Nonagria. Will the application of any amount of the above solution prevent grease in these insects? If so, then, indeed, we are without excuse, if we have a greasy specimen in our cabinets. I am sure that, if this meets his eye, Mr. Doubleday will kindly answer the following question:—Take six specimens (fresh) of each of the following insects, — Sesia Bembeciformis and Apiformis, Nonagria Typhæ and Lutosa; apply the solution and place them in a box. Let nothing else be done; and will Mr. Doubleday guarantee that, at the end of six months or more, there shall not be a greasy specimen among the twenty-four insects? If so, I can say no more. As regards *mites*, Mr. N. says he assumes that camphor is used to prevent their attacks. Most unquestionably; and I firmly believe that it *does* do so. Like him, I am no believer in what is called "spontaneous generation;" but surely he will allow that mites may, and do, find admission into his cabinets, or *store-boxes*, by other means than either this or the unhappy transference of a mite-bearing specimen into his collection? According to my present light (but I am open to conviction) I am aware of no infallible remedy against grease, except the removal of the contents of the body; and, as regards mites, I have found no box or cabinet impervious to their insidious entry, however managed; and that, where there is no camphor, there are more mites. In saying this I do not mean to imply that the application of Mr. Doubleday's solution may not be an equally, or more effectual, preventive. I may add that, in general, the only way to keep a collection in really good order is constant supervision.—[*Rev.*] *J. Greene; Apsley Road, Redland, January* 3, 1871.

Bean Weevil.—Will you kindly advise under the following circumstances:—A quantity of beans, which was bought for seed, is infested by a small Coleoptera; the beans were apparently intact, yet, on opening some, the beetle will be found inside. What is wanted to be known is, what will kill them. Will the mere fact of the cold and wet, to which they would be exposed when the beans are set, kill them? or will some sort of washing or dressing be required to destroy them? I know you have long studied economic Entomology, and should, therefore, feel much obliged by the benefit of your experience being brought to bear on the subject.—*A. B. Farn; 8, Richmond Terrace, Whitehall, January* 18, 1871.

[The beetle is very familiarly known as the "bean weevil" (Bruchus rufimanus). The same complaint, and numerous enquiries, have reached me through the 'Field' newspaper; and, with a view of disposing of them all at once, I published a life-history of the insect in the 'Field' for November 26th, giving figures of the beetle and of the bean. Nevertheless, I am obliged to confess my inability to recommend a remedy, and hesitate to say anything about "washing or dressing," as I know of no experiments in either direction that have proved successful: still I can conscientiously, and most emphatically, caution my readers against the purchase and use of advertised nostrums,— as powders, insect-destroyers, and so forth,— because this is not only a waste of money, but it diverts the attention of the sufferer from those careful investigations which might possibly lead to some beneficial result, just as the republication of the description of a caterpillar, from some authentic source, leads to a reluctance to take the trouble of writing an original description. I have often been reproached with having written original descriptions, when good descriptions had been previously published by Samouelle, Haworth, Stephens, Jermyn, &c., &c. I think otherwise: I think that this system of copying, instead of observing, simply perpetuates error, and thrusts poor Truth still farther into the well, where she is said to have taken up her residence. That the injury committed by this Bruchus is increasing year after year, as stated by some of the alarmists, I totally disbelieve. One hundred and twenty years ago, namely in 1750, a statement was published that "a thousand quarters of large beans were so infested, that the meal, after passing through the mill-stones, was apparently alive with beetles, which took wing and flew about the mill by thousands; and there were from three to five insects in many of the beans." It is, perhaps, difficult to see how the beetles escaped the somewhat uncongenial and unpleasant interference with their anatomy, which mill-stones might possibly occasion; but that is nothing to the purpose. I think that, taking the statement exactly as it stands, it shows *first*, that Bruchi were as numerous 120 years ago as they are now; and *secondly*, that the average number, per bean, was then largely in excess of what it is now: it was then from three to five in a bean; and now the average number, per bean, is certainly a decimal fraction of *one*. Here is a crumb of comfort for the sufferers.—*E. Newman.*]

The Gall Midge of the Ash (*Cecidomyia botularia*, Winnertz).—It often occurs that, long before autumn, particularly in dry seasons, the foliage of the common ash (Fraxinus excelsior) shows signs of premature decay by turning sere and yellow on certain sheltered branches, which eventually shed their leaves much earlier than their neighbours. If we ask the cause of this, we are generally told that the leaves are blighted. But "blight" is such a convenient term when we want to gloss over our superficial knowledge of the diseases of plants, that we have long made up our mind not to be contented with this explanation. In the present instance our observations extend over four years' occasional investigations in Kent and Surrey. We meet with such unhealthy branches on trees of all ages as early as July and August, but it is in September that their yellow hue strikes us most forcibly. For example's sake, we single out one limb, and describe its condition as seen in September. Here and there we see one intact leaf, standing out by its greenness, but the rest are more or less discoloured, and, moreover, distorted, irregular in shape, and folded or crumpled up. We look for a common mark, how to distinguish these disfigured leaves from the normal ones, and we find it in a peculiar partial thickness of the midrib, which, besides, exhibits a longitudinal channel in many instances. Up till this time we have only been viewing the upper surface of the leaves; let us, therefore, inspect their underside as well. We raise the branch up, and the cause of its blighted appearance is explained. Every discoloured and disfigured leaf exhibits on its leaflets a more or less slender swelling of the midrib or of the stalk itself; in some leaves the whole midrib, from base to tip, is thus incrassated, and the lateral parts of the leaf folded from edge to edge; in others their basal part alone is swollen up, and their anterior part more or less abortive. These pod-like swellings or galls are covered with a whitish or brown pubescence, and their juicy consistency shows that they serve as receptacles, diverting the sap, originally intended to supply the whole leaf; hence the sere appearance of the latter, hence its untimely decay. If we now take a longitudinal section of the swollen midrib, we find that it contains a long cell, tenanted by one or several reddish-yellow, footless, 14-jointed larvæ of about a line in length. Their food consists of the juices exuding from the incrassated sides of their dwelling-place; hence, if we open the latter whenever we please, we shall almost always find it licked scrupulously dry, but strewn with the black excrements of its inhabitants. In about three weeks the larvæ are full-fed, when they become obese and sluggish; the irritation their licking produced on the sides of their chamber therefore ceases, the sap no longer flows steadily inward, but becomes accumulated in the more or less pod-shaped, fleshy halves of the gall; a consolidation of the two halves respectively ensues, and causes a longitudinal fissure between them on the upper side of the midrib, through which natural opening the larvæ drop to the ground, in which they bury. Here they shortly become sculptured pupæ, exhibiting all the limbs of the future fly, in thin semi-transparent sheaths, which are laid flat along the breast. In about three weeks from the time of burying, the mature pupæ force their way half out of the ground, and the perfect midges, by bursting their silver-white pupal skins, make their appearance. A few hours' breathing give them the use of their wings and limbs. They are two-winged Cecidomyiæ, or gall-midges; and the species has been described by Winnertz under the name of Cecidomyia botularia. In its living state it is about a line in length; it is reddish-yellow, with a white beak; its thorax shows three narrow, short, pale-brown streaks; the poisers are pedunculated and whitish; in the segments the abdomen is brown, each segment with a fine brownish lateral streak; the hind border of the segments, above and beneath, is fringed with long whitish hairs. The six legs are long and slender, brownish, and clothed with a white pubescence. The wings are comparatively large, transparent, with sparse grayish hairs, and suffused with a weak iridescent violet; their viens are brownish. The feelers are brownish, 26-jointed in the male, and 14-jointed in the female; the latter is furnished with a short ovipositor. The ravages of this midge are mostly confined to the lower and protected limbs of the ash, and if the underside of the branches is examined, a glance shows the conspicuous galls; a practised eye will even soon tell an injured leaf by the peculiarities of its upper surface. If we now look to a remedy, how most effectually to destroy the progeny of these midges, it is evident that we have to remove the affected leaves before the escape of their inmates. Such leaves should be burned, and not simply thrown on the manure-heap, else instead of checking the plague we foster it; and as an additional precaution we would recommend, likewise, to destroy the whole foliage of the season, after its fall, instead of letting it rot on the ground.—*Albert Müller; 'Gardener's Chronicle,' December* 31, 1870.

Encasement of Queen Bees.—Perhaps there are few more unaccountable occurrences in an observant apiarian's experience than the discovery of a small, but hard and densely packed ball of living bees, in the centre of which will be found, if the trouble be taken of carefully unravelling the tangled knot, their own queen, living probably, but in a more or less moribund condition. This is a sight, however, which seldom comes under the notice of the ordinary bee-keeper, who does nor aim at much beyond the commonest methods of management. The scientific bee-keeper, particularly if he attempts much in the way of making artificial swarms and raising artificial queens, will not have pursued his peculiar observations and manipulations very long before he will have one or more instances of this very interesting, though at the same time very disagreeable, encasement of a queen occurring under his own immediate notice. The first case of the sort that I remember as taking place in my own apiary was attended with fatal consequences. A Ligurian queen was presented to me by a friend residing at a considerable distance. Having been sent in a moderate-sized nucleus box, accompanied with the bees of the small artificial swarm by which she was reared, and all being sufficiently well packed, ventilated, and supplied with food, she arrived in very good condition. I was desirous of placing her at the head of a strong swarm, so that I might obtain, as soon as possible, the full benefit of her breeding powers, and be enabled to raise numerous young queens from her, provided she proved by her progeny to be a pure-bred Ligurian. She was, therefore, enclosed with a few of her subjects in a perforated zinc queen cage, which was fixed among the combs of a hive from which I had previously removed the common queen; and having been allowed to remain for twenty-four or thirty-six hours in this condition, the cover was drawn, and she, with her fellow-prisoners, was set at liberty. The latter were seized upon and killed instantly, but the queen disappeared among the combs. A few hours after, observing some signs of excitement, I opened the hive, and discovered the queen encased in a dense mass of bees. Having separated them carefully, by catching each individual bee and throwing it away, her persecutors were reduced to two or three; and now was the critical time. I had great difficulty in preventing these from inflicting a fatal sting, and had to crush one or two of them between my fingers to avoid such a catastrophe. Having freed her from their embraces, I again clapped her into the queen cage, and shut her up among the combs for another period of imprisonment. When I thought that sufficient time had elapsed, and that the bees would surely have become accustomed to her presence, and acquainted with her person, she was again set at liberty. The hive was allowed to remain undisturbed for some hours, at the end of which, on going to ascertain the result, I found her lying dead on the ground outside the hive. I have other instances where the same sort of encasement has taken place, but the bees have of their own accord gradually unfolded themselves, loosened their grasp of each other and the queen, and she has come out of the ordeal scatheless. Occasionally I have found a wing or a leg crippled, or altogether missing, having been maimed in the cruel embrace of her subsequently loving subjects. Although I have raised a very large number of artificial queens, my plan of late years has been to let the hives or small swarms alone, and on no account to disturb them or the bees to which strange queens have been given, for many days. Although I have no reason to doubt that the same kind of queen encasement has frequently taken place, yet I have hardly ever lost a queen from this cause since adopting this plan. I believe that the very anxiety of the bee master too frequently defeats his object—the bees are excited to anger which they would not otherwise have manifested. — *S. Bevan Fox; in 'Gardener's Chronicle,' January* 15, 1870.

Extracts from the printed Proceedings of the Entomological Society, December 5, 1870, *and January* 2, 1871.

New British Hemiptera.—Mr. Edward Saunders exhibited three species of Hemiptera Heteroptera recently added to the British list: Salda arenicola, found on the moist parts of the cliffs to the east of Bournemouth; Plociomerus luridus, two specimens captured by Mr. G. R. Crotch in the New Forest; and Hadrodema pinastri, found by Dr. Power at Weymouth, and since by Mr. E. Saunders in Surrey, at Gomshall and near Reigate, on Scotch firs. The last-mentioned insect was interesting, as adding not only a new species, but a new genus, to the list of British Hemiptera. Mr. E. Saunders also exhibited British specimens of Strachia festiva, which Messrs. Douglas and Scott incorrectly give as a synonym of S. ornata; and several allied continental species, to show their distinctness from S. ornata.

Vanessa Urticæ.—Mr. Butler exhibited a dwarf Vanessa Urticæ, about half the usual size, and very dark in colour, especially on the hind wings. It was one of a brood reared during the present season, the rest of which were of the ordinary size and colour.

New British Coleoptera.—Mr. F. Smith exhibited six specimens of Calodera rubens captured at Lewisham, in March; and Baridius scolopaceus captured on the Kentish coast, in June: both, in the present year, by Mr. Champion. The latter insect is new to the British list of Coleoptera, and differs from other species of Baridius by its elongate snow-white scales.

Beautiful Spider from Syra.—Mr. S. S. Saunders exhibited a living specimen of Eresus ctenizoides, a large spider from Greece, of remarkable beauty: it was of a rich velvety black, with a dull golden border to the abdomen. It was brought from Syra, and its habit was to live under stones, and feed on large grasshoppers. Owing, perhaps, to the smallness of the English grasshoppers, it had remained without food since July.

Asilus preying on Gryllidæ.—Mr. F. Smith mentioned that he had found on Woollacombe Sands, North Devon, a silvery species of Asilus, whose habit it was to prey upon grasshoppers: the latter were numerous in the grassy spots adjoining the sands, and were carried off by the Asilus, which flew with its prey down to the sands, and there devoured it. The species had been determined by Mr. Verrall to be the Asilus albiceps of Meigen, and belongs to Loew's subgenus Philonicus, the only other described species of Philonicus being the P. dorsiger of Wiedemann, from Egypt. Mr. Smith added that Asilus crabroniformis was in swarms at Woollacombe, but appeared to confine its attacks to small Diptera.

Monograph of Ephemeridæ.—Read, the first part of a Monograph of Ephemeridæ, by the Rev. A. E. Eaton. After enumerating the various collections which he had had the opportunity of consulting, the Author gives a bibliographical history of the group from the time of Clutius (1634) to the present day, indicating under each book the species therein for the first time named and characterized, and, when possible, the places where the type specimens, if extant, are deposited. Then follows a list of all the described species arranged in the alphabetical order of the genera; together with remarks on the fossil species, and a list of names of the fossils hitherto reputed to be Ephemeridæ. In the next portion of his paper, the Author gives the generic characters and habits of the Family, followed by Tables of the geographical distribution over the globe of both genera and species, and arrives at the couclusion that "the number of described recent species of Ephemeridæ is about 178, exclusive of ten, which are either hardly determinable or probably mere conditions of well-characterized forms which have been otherwise named; there are three fossil species determinable." The whole of the recent genera and species (including fonr new genera, and twenty-five new species) are then characterized; and the descriptions are elucidated by numerous drawings of structural details. On a future occasion the Author hopes to give a detailed account of the organization and development of some characteristic British species of the Family.

Notable British Lepidoptera.—Mr. W. C. Boyd exhibited some varieties of several British Lepidoptera: amongst them a female Colias Edusa, with the black spot on the front wings almost obliterated, captured in the Isle of Wight in 1869; a dwarf Pieris Rapæ, captured at Cheshunt; a dwarf

Liparis auriflua; the dark form of Miselia Oxyacanthæ; a very pretty and curious Polia Chi (?); and an Agrotis aquilina, with the stigmata joined by a distinct brown line.

Plusia Interrogationis in Sussex.—Mr. Verrall exhibited a specimen of Plusia Interrogationis, captured by Mr. Jenner at Battle, Sussex,—a new locality for the insect.

Anthrax parasitic on Agrotis.—Prof. Westwood called attention to the fact, that in the continuation of Sepp's Nederlandsche Insecten (Ser. 2, vol. ii. pl. xlii.), Dr. Snellen van Vollenhoven has recently figured an Agrotis with a Dipterous parasitic of the genus Anthrax. Though familiar as a parasite on Coleoptera and Hymenoptera, Anthrax had not hitherto been known to attack Lepidoptera.

Newcastle-on-Tyne Entomological Society. — The first Exhibition was held on the 17th inst., in the Curator's room of the Natural History Society's Museum, which has been kindly lent to the Society to hold its meetings in. Amongst the exhibitors were Messrs. Hedworth, Crossling and W. M. Hamilton, who showed cases representing the British butterflies; Messrs. D. P. Morrison and F. Barkas, several cabinet drawers of butterflies and moths; Messrs. Hedworth, Richardson and Bulman, several cases of butterflies and moths; Messrs. Johnston and J. Hamilton, two cases of large silk-moths, many of which had been reared by themselves; Mr. Maling, a case containing Swiss butterflies and moths; Mr. Johnston, a case of continental types of rare and reputed British Lepidoptera, also several fine varieties of Betularia and A. caja; Messrs. Johnston and Henderson, cases of Coleoptera and Diptera; Mr. C. Eales, a very fine case of Tineina, amongst which were several new species discovered by him during the past year; Messrs. the Rev. W. L. Kay, Skelton and Hamilton, cases of Ornamental Entomology. This is the first exhibition the Society has held, and it was quite a success, being largely patronized by visitors, although the meeting had not been publicly announced. During the course of the evening the Rev. W. L. Kay delivered a very interesting address.

THE ENTOMOLOGIST.

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List of Diptera collected in Egypt and Arabia, by J. K. Lord, Esq.; *with Descriptions of the Species new to Science, by* F. Walker, Esq., F.L.S.

The Diptera in this collection are not very numerous, and, with some exceptions, are not remarkable, and but slightly represent the Dipterous Fauna of Egypt and of Arabia. The more conspicuous species are Nemestrina Ægyptiaca, Exoprosopa gloriosa, Dimorphaphus syrphoides, and Midas maculatus.

Fam. Culicidæ.—Gen. Culex, *Linn.*

1. *C. pipiens*, Linn. Syst. Nat. i. 2, 1002. Cairo. Inhabits Europe.

Fam. Tabanidæ.—Gen. Tabanus, *Linn.*

2. *T. terminalis. Female.*—Red. Head piceous above, with a shining ferruginous callus; triangular space between the callus and the antennæ with pale testaceous tomentum; under side clothed with white hairs. Eyes black; facets extremely small. Palpi white. Antennæ tawny, testaceous at the base, with the usual structure. Thorax with two blackish stripes, and in front with two exterior blackish patches. Abdomen with two blackish stripes; disk blackish towards the tip; hind borders of the ventral segments testaceous. Legs tawny; tibiæ at the tip and tarsi ferruginous. Wings cinereous; veins black, with the usual structure; branch of the cubital vein forming a very obtuse angle near its base. Halteres testaceous, piceous at the tips. Length of the body 7½ lines. Mount Sinai.

3. *T. nigrifer. Female.*—Blackish. Head above with cinereous tomentum; callus ferruginous, with a band of cinereous tomentum; space above the eyes bare, shining; under side with white hairs. Eyes with extremely small facets. Palpi testaceous. Antennæ with the usual structure. Thorax with four stripes of cinereous tomentum. Hind borders of the

abdominal segments tawny. Tibiæ dingy whitish towards the base. Wings dark cinereous; veins black, partly and slightly bordered with brown; branch of the cubital vein forming a very slightly obtuse angle which emits a branch. Halteres whitish. Length of the body 7½ lines. Hor Tamanib.

4. *T. politus. Female.*—Black. Vertex with whitish tomentum and with a whitish band, which adjoins the deep black shining convex part on which the antennæ are seated; under side clothed with white hairs. Eyes with extremely small facets. Palpi white. Third joint of the antennæ not angular above. Thorax and pectus with cinereous hairs. Abdomen with two rows of oblique elongated cinereous spots; two spots on each segment. Four posterior tibiæ and tarsi cinereous; fore tibiæ striped with whitish above, except towards the tips. Wings cinereous; veins and stigma black; branch of the cubital vein forming an obtuse and much rounded angle near the base. Halteres tawny. Length of the body 5 lines. Hor Tamanib.

5. *T. pallescens. Female.*—Black. Head with hoary tomentum; vertex with two small shining calli, the fore one broader than the hind one, with which it is connected by a line. Eyes æneous, with extremely small facets. Palpi white. Antennæ tawny, slender, piceous towards the tips; third joint slightly angular above. Thorax with four cinereous stripes; sides mostly tawny. Abdomen ferruginous, with three cinereous stripes. Coxæ and femora piceous; tibiæ dingy whitish, black towards the tips; four posterior tarsi piceous, whitish towards the base; fore tarsi black. Wings cinereous; veins black, whitish at the base; branch of the cubital vein forming a very obtuse and rounded angle near the base. Halteres white. Length of the body 5 lines. Tôr.

Fam. PANGONINA.—Gen. PANGONIA, *Latr.*

6. *P. zonata. Male and female.*—Black. Head and thorax with cinereous tomentum. Head tawny, with a small shining black callus on each side in front; under side thickly clothed with white hairs. Proboscis black, rather more than half the length of the body. Antennæ and legs tawny. Abdomen brown; basal half testaceous; hind borders of the following segments tawny. Wings brown; first branch of the cubital

vein forming a very slightly obtuse angle which emits a branch. Halteres testaceous. Length of the body 7—8 lines. This species belongs to the South African group, of which P. appendiculata is a type. Tajura. Abundant, and very tormenting to cattle.

7. *P. subfasciata. Female.*—Black. Head above with whitish tomentum, excepting the shining ferruginous stripe between the eyes; a black shining callus on each side in front; under side with whitish hairs. Proboscis black, rather more than half the length of the body. Antennæ and legs pale tawny. Abdomen piceous-black; first segment irregularly tawny in front and behind; second with a tawny band on the hind border; third with a tawny line on the hind border; under side testaceous, brown at the tip. Wings cinereous; veins black; first branch of the cubital vein forming a very slightly obtuse angle which emits a branch. Length of the body 6½ lines. Nearly allied to the preceding species. Tajura.

Fam. DASYPOGONIDÆ.—Gen. DASYPOGON, *Fabr.*

8. *D. punctatus*, Fabr. Syst. Antl. 165. Harkeko. Tajura. Inhabits South Europe.

9. *D. glaucius*. Asilus glaucius, Rossi, Faun. Etrusc. ii. 327. Harkeko. Inhabits South Europe and Siberia.

10. *D. contrarius. Female.*—Black, broad stout. Head short, thickly clothed with white hairs; hind part with testaceous hairs. Mystax and beard white, thick. Proboscis short, stout. Antennæ slender, lanceolate; arista short. Eyes very large; the facets increasing in size from the outer border to the inner border. Thorax thickly clothed with long testaceous hairs. Abdomen almost flat, thickly and minutely punctured, clothed with white hairs, slightly tapering from the base to the tip, a little narrower than the thorax, and nearly twice its length; under side and pectus with very few hairs. Legs stout, thickly clothed with white hairs. Wings whitish; veins black, tawny at the base, slightly bordered with pale brown; hind fork of the cubital vein, and all the hinder veins, not extending to the border. Halteres testaceous. Length of the body 5 lines. This species appears to be allied to the group Pycnopogon; there are three closed areolets in the exterior part of the disk. Mount Sinai.

11. *D. longicornis*, Macq. Dipt. Exot. i. 2, 192. Harkeko. Wâdy Gemnèh. Inhabits Egypt.

Fam. Laphridæ.—Gen. Laphria, *Fabr.*

12. *L. nobilis*. *Male and female.*—Black, with slight cinereous tomentum. Head with black bristles on the vertex and behind and beneath the mystax, which is white; under side with white hairs. Palpi with black bristles. Antennæ clavate; third joint fusiform. Thorax with a white spot on each side in front. Abdomen dark blue towards the tip; first segment with black bristles on each side; second and third with a silvery white spot on each side. Legs with black bristles and spines; arolia pale testaceous. Wings pellucid, more or less brownish and with brown veins towards the tips; veins elsewhere luteous. Halteres testaceous. Length of the body 11—15 lines. The group to which this species belongs has numerous representatives in the Eastern Isles. Rafla. Tajura.

Fam. Asilidæ.—Gen. Erax, *Macq.*

13. *F. cinctipes*. *Male.*—Black, with cinereous tomentum. Head with white hairs behind, and with a thick white mystax. Antennæ slender; third joint lanceolate; arista nearly twice the length of the third joint. Thorax with two black approximate stripes. Abdomen tapering, with cinereous hairs; tip above with a thick tuft of white hairs. Legs stout, with cinereous hairs; femora tawny beneath; tibiæ tawny, with black tips; tarsi with stout black bristles. Wings cinereous; veins black, tawny at the base; a dark cinereous streak between the forks of the cubital vein; these forks are formed by a transverse veinlet near their base, and there is another veinlet between the hind fork and the first externo-medial vein. Halteres testaceous. Length of the body 9 lines. Wâdy Ferran.

14. *E. cinicolor*. *Female.*—Black. Head with white tomentum, clothed with white hairs; mystax white. Antennæ slender; arista long. Thorax with cinereous tomentum and with three paler shining slender stripes; a few long stout black bristles on each side. Abdomen with hoary tomentum, full twice the length of the thorax, tapering from the base to the tip, which is black and shining. Legs stout, with hoary tomentum and with some black bristles; femora beneath and

tibiæ reddish. Wings limpid, extending nearly to the tip of the abdomen; veins black, tawny at the base; hind branch of the cubital vein very near the first externo-medial vein, with which it is connected by a little veinlet. Halteres tawny. Length of the body 10—11 lines. Harkeko. Dahleck.

Gen. ASILUS, *Linn.*

15. *A. femoralis*, Wied. Auss. Zweifl. i. 466. Wâdy Ferran. Tôr. Inhabits Egypt.

16. *A. deformis*. *Male and female.*—Black, stout, with cinereous tomentum. Head clothed with white hairs; mystax white. Thorax with three blackish stripes; some whitish bristles on each side. Abdomen tapering from the base to the tip, nearly twice the length of the thorax; hind borders of the segments, from the first to the fourth, black; a few whitish bristles on each side. Legs stout, with whitish bristles; tibiæ and tarsi tawny; hind tibiæ black on the outer side. Wings pellucid; veins black, tawny at the base; forks of the cubital vein undulating. Halteres testaceous. *Male.*—Sexualia small. *Female.*—Oviduct short, compressed, black, shining. Length of the body 9—10 lines. Wâdy Ferran. Wâdy Nash.

17. *A. miratus*. *Female.*—Black, dull, rather slender. Head with white bristles; mystax white; epistoma prominent; some black bristles near the antennæ, which are slender. Thorax with short black hairs; some black bristles and some longer and stouter white bristles on each side. Abdomen lanceolate, more than twice the length of the thorax, with some white bristles towards the base; tip shining, compressed. Legs black, with white bristles; tibiæ and tarsi tawny; hind tibiæ striped with blackish on the outer side. Wings pellucid; veins black, tawny at the base; forks of the cubital vein slightly undulating. Halteres testaceous. Length of the body 7½ lines. Tajura. Wâdy Nash.

18. *A. enitens*. *Male.*—Black, with hoary tomentum. Head with white hairs behind and beneath; mystax white, thick, with very slender bristles. Antennæ testaceous. Thorax with very few white bristles. Abdomen with a few short white bristles on each side, about twice the length of the thorax, tapering from the base to the tip, which is tawny; sexualia small. Legs testaceous, rather slender; bristles

white, short, slender; femora black above. Wings pellucid; veins testaceous; fore fork of the cubital forming near its base an obtuse angle, which emits a branch. Halteres testaceous. Length of the body 7½ lines. Wâdy Gennèh.

Gen. DAMALIS, *Fabr.*

19. *D. cinctipes. Male.*—Black. Head broader than the thorax; mystax composed of a few white bristles. Proboscis very short. Antennæ setaceous, slender. Thorax with a few slender black bristles. Abdomen more than twice the length of the thorax. Legs with some white hairs; tibiæ testaceous towards the base; hind tibiæ clavate; hind tarsi dilated. Wings cinereous; veins black. Halteres testaceous. Length of the body 4½ lines. Hor Tamanib.

Fam. NEMESTRINIDÆ.—Gen. NEMESTRINA, *Wied.*

20. *N. Ægyptiaca*, Wied. Auss. Zweifl. i. 249. N. reticulata, *Latr.*, and N. Ægyptiaca may be identical. The family Nemestrinidæ excel all the other Diptera in the development of their wing-veins, and in their consequent power of flight. Cairo. A specimen of this species, from Trebizonde, is in the British Museum.

Fam. BOMBYLIDÆ.—Gen. EXOPROSOPA, *Macq.*

21. *E. gloriosa. Female.*—Black. Head with bright gilded tomentum and pubescence; epistoma prominent. Eyes iridescent. Antennæ black, lanceolate; first and second joints luteous. Fore border and sides of the thorax and sides of the pectus with bright gilded hairs; scutellum ferruginous. Abdomen broadly and thickly bordered above and below with bright gilded hairs; under side more thinly covered with pale gilded hairs. Legs luteous, with short black bristles; tarsi black, except at the base. Wings black, with brilliant blue and purple reflections. Halteres testaceous. Length of the body 7½ lines. The species of Anthrax and of Exoprosopa excel all the rest of the Diptera in beauty and elegance, and E. gloriosa is more gorgeous than all the others of its tribe. Harkeko.

22. *E. marginalis. Female.*—Black. Head tawny on each side of the epistoma, which is prominent. Antennæ black. lanceolate. Thorax thickly clothed with orange hairs on the fore border and on each side with orange hairs. Scutellum piceous. Abdomen tawny and with gilded tomentum on

each side and beneath. Legs tawny, long, slender; tarsi black. Wings black; a white dot and a posterior white point in the disk at one-third of the length; a white spot in the disk at half the length; an occasional cinereous longitudinal streak near the hind border; tips cinereous. Halteres testaceous. Length of the body 6 lines. Massowah.

23. *E. nigrifera. Female.*—Black. Head tawny on each side of the epistoma, which is prominent. Thorax with some black bristles on each side. Wings black, with a cinereous streak in the disk, with three posterior cinereous dots and with paler cinereous tips. Halteres tawny. Length of the body 6 lines. Mount Sinai.

24. *E. disrupta. Male.*—Black. Head luteous and with gilded tomentum, excepting the vertex. Antennæ black, lanceolate, tawny towards the base. Thorax clothed with yellowish hairs on the fore border, and with white hairs along each side, where there are some black bristles. Scutellum dark red. Abdomen red along each side and at the tip; a band of white or of yellowish pubescence on the fore border of each segment; under side red. Legs black. Wings black, with five cinereous spots, and along the hind border with a broad cinereous space which is interrupted by some black streaks along the veins. Halteres yellowish. *Female.*—Abdomen not red; under side with white pubescence. Length of the body 5½—6 lines. Hor Tamanib.

25. *E. antica. Male and female.*—Black. Head with yellowish pubescence and with many black bristles. Antennæ lanceolate. Thorax with yellowish white hairs along the fore border and along each side, where there are many black bristles. Scutellum of the male ferruginous. Abdomen along each side with whitish hairs and with black bristles, the latter most prevalent in the female; under side with whitish tomentum in the male. Wings cinereous, brown along the costa; transverse veinlets clouded with blackish. Halteres testaceous. Length of the body 5½—7 lines. Hor Tamanib. Tôr.

26. *E. paupera. Male.*—Black. Head with a prominent epistoma, which has silvery white tomentum. Antennæ lanceolate. Sides of the thorax and of the abdomen with silvery white hairs. Hind border of the scutellum tawny. Pectus and under side of the abdomen with silvery white tomentum. Legs black. Wings slightly cinereous, pale

testaceous at the base; veins black, except at the base; three submarginal areolets. Halteres testaceous. Length of the body 4½ lines. The specimen described is somewhat worn; in a recent state it may probably have silvery white bands on the abdomen. Tajura.

Gen. ANTHRAX, *Fabr.*

27. *A. incana*, Klug. Symb. Phys. pl. 30, fig. 5. Mount Sinai.

28. *A. plagiata. Female.*—Black. Head with a tawny and prominent epistoma. Antennæ black, lanceolate. Thorax with whitish hairs on each side. Scutellum bordered with red. Abdomen with whitish hairs on each side, and more especially at the tip; a tawny patch on each side; tips tawny. Tibiæ tawny. Wings pellucid, with some brown nearly contiguous patches, which terminate obliquely, occupy about half the surface, and do not extend to the hind border; veins black, tawny at the base. Halteres testaceous. Length of the body 4 lines. This species and the preceding have only two submarginal areolets, but agree with Exoprosopa in the structure of the head and of the antennæ. Cairo.

29. *A. fenestrata*, Fabr. Dipt. Suec. Anthrac. 8, 4. Hor Tamanib. Inhabits Europe.

30. *A. morio.* Musca morio, Linn. Faun. Suec. 1784. Hor Tamanib. Inhabits Europe.

31. *A. semiatra,* Meig. Dipt. ii. 157. Harkeko. Inhabits Europe.

32. *A. suffusa,* Walk. List Dipt. B. M. ii. 251 var.? The spot nearest the tip of the wing in the tropical specimen is wanting in those here recorded; they differ still more from A. diffusa, *Wied.* Cairo.

33. *A. subnotata. Female.*—Black. Epistoma not prominent. Hind borders of the abdominal segments tawny, with silvery white tomentum. Legs black. Wings cinereous; two transverse blackish streaks in the disk, the outer one much shorter than the inner one; two submarginal areolets; veins black; fore fork of the cubital forming near its base an angle which emits a branch. Halteres testaceous. Length of the body 4½ lines. Mount Sinai.

34. *A. micrargyra. Male.*—Black. Head silvery, and with

silvery white hairs on each side above, along the eyes; hind part silvery. Antennæ very short; third joint round. Thorax with long silvery white hairs on each side. Abdomen clothed with silvery hairs beneath and towards the tip above. Femora slightly silvery beneath. Wings quite pellucid; veins white. Length of the body 3½ lines. Cairo.

FRANCIS WALKER.

(To be continued.)

Entomological Notes, Captures, &c.

Mr. Fetherstonhaugh's Crotchets.—It appears to me somewhat odd that, with respect to Crotchet No. 1, both Mr. Newman and the Rev. Joseph Greene have quite passed by the question raised. Mr. F.'s crotchet, as he very distinctly stated it, is that strychnia, by its diffusive power, if inserted into the thorax of the living insect would effectually ward off all future attacks of mites, &c., from any portion of a specimen so killed. This is a simple proposition, which I, for one, have been most anxious to see discussed and disposed of; but Mr. Newman and Mr. Greene have gone off into a discussion of whether camphor is synonymous with grease, and whether it or benzole is the most pleasing to the olfactory nerves. Mr. Fetherstonhaugh has not stated that strychnia, in its immediate effect of producing the death of the insect, is at all to be preferred to any of the modes of killing already before the public, but he has suggested that its use may obviate the necessity for having recourse to camphor, benzole, cajeput, or any of the other strong-scented matters, to which I would apply Mr. Greene's remark, "de gustibus," &c. I beg to suggest a crucial test: let an insect (say of the Bombycidæ) be killed in the manner suggested by Mr. Fetherstonhaugh, and, when set and dry, placed in a drawer with insects already affected with mites: if the insect killed with strychnia escapes attack, then Mr. Fetherstonhaugh will have established his point, and done good service to the science of Entomology. I will not attempt to follow Mr. Newman and Mr. Greene into the grease question; Mr. Newman appears to abjure camphor and suggest benzole; Mr. Greene likes the one and abhors the other.

Dr. Knaggs, in his 'Lepidopterist's Guide,' condemns both. When such learned and eminent authorities so differ, what is a humble member of the "profanum vulgus," like myself, to think or do?—*E. MacDowel Cosgrave; Reading Rooms, Trinity College, Dublin.*

Gall of Ammophila arundinacea.—The galls on Ammophila arundinacea, *Host.* (*Psamma arenaria*, L.), found by Mr. Traill, near Aberdeen (as noticed in 'Entomologist,' vol. v. p. 189), are not made by a gall-fly, as is supposed by Mr. Moncreaff (Entom. 240), but by Eurytoma longipennis of Walker, a species of Chalcidite. The same galls were discovered in our country by my brother John Ritsema, in 1868, on the downs, near Landvoort, in Noord-Holland, and have produced the above-mentioned insect, which, however, is not a parasite. You will find the life-history of this species in the 'Archives Néerlandaises des Sciences exactes,' vol. v., 1870; and some remarks on the same subject appear in 'Nederlandsch Tydschrift voor Entomologie,' 2nd series, vol. vi. 1871, in the 'Proceedings' of the Scientific Meeting of 5th November, 1870.—*C. Ritsema, Cz.; Netherlands, Leiden, Mare*, 642, *February* 15, 1871.

S. dealbata in Hertfordshire.—In your excellent work on 'British Moths' you say that S. dealbata is very common in one or two localities in Kent, but is unknown elsewhere in England. I believe it has hitherto been found nowhere else but in Kent, and I was, on this account, surprised to come across a single specimen whilst collecting on Berkhampstead Common, in July, 1869. I cannot be mistaken as to its identity, having seen many specimens of this insect, and compared mine with them.—*C. L. Raynor; Bordyke House, Tonbridge, February* 16, 1871.

Variation in Butterflies, Deilephila Galii.—With reference to your correspondent's remarks respecting Epinephele Hyperanthus, I beg to state that I possess specimens of the insect with the rings distinctly on the upper surface, which specimens I shall be glad to send for your inspection if you desire it. I have also a specimen of Pieris Brassicæ, male, with a *trace* of black on the upper surface of one of the fore wings, in the position occupied by the circular black spot on the under surface. I notice, in the last number of 'British Butterflies,' that you do not give Yorkshire as a locality for

Colias Edusa. It has occasionally been taken in this neighbourhood, and a specimen was seen in the immediate vicinity three years ago. I have heard of two captures of Deilephila Galii during the past year, in addition to those mentioned in the 'Year-book;' one by a friend of mine at Middlesborough (which I have seen), and another at Sheffield.—*Jas. H. Rowntree; Westwood, Scarborough, February* 14, 1871.

Thecla Quercus and Satyrus Tithonus in Ross-shire.—Would *bonâ-fide* specimens from Ross-shire of S. Tithonus and T. Quercus dissipate the scepticism of Mr. Jenner-Fust? If so, I shall have the greatest pleasure in transmitting him a specimen of each. In the same district I have taken Cymatophora Or, Thyatira Batis and Notodonta dictæoides, which, so far as I am aware, have not hitherto been discovered so far north.—*A. Davidson; Tarbert, Fearn, by Inverness, February* 4, 1871.

Deilephila Galii at Plumstead.—I have lately had my collection of insects increased by a specimen of D. Galii, which was caught last August by a boy, in a greenhouse, at Plumstead, Kent. I have made you acquainted with this capture, as I believe that this insect is not of common occurrence in this county.—*Thomas Barns; Oakington House, Beckenham, Kent, February* 18, 1871.

Deilephila Galii; emergence on the 8th February.—I had a splendid specimen of Deilephila Galii emerge from pupa yesterday afternoon. I was fortunate in securing several larvæ of this rare moth, on the sand-hills at New Brighton, last autumn, feeding on the lady's bedstraw. I have kept the pupæ in a warm kitchen.—*Samuel James Capper; Huyton Park, near Liverpool, February* 9, 1871.

Management of Liparis dispar.—I hope you will not deem the following question too trivial for a reply in the 'Entomologist' next month, but I am unable to ascertain from your 'Insect Hunter's,' or your valuable work on 'Moths,' the time I may expect the eggs of Liparis dispar to hatch, and whether accelerated by heat or otherwise. I hope I am not too late for a reply in the February number. What should their food consist of when first hatched? I am only a beginner (the first year I have attempted to carry larvæ through the winter).—*J. H. Melhuish;* 25, *Albert Street, Islington, January* 27, 1871.

[This note arrived after the publication of the February number. In reply, I may say that I have had no experience in breeding Liparis dispar. English specimens, either as eggs or larvæ, are not to be obtained, but, as in silkworms, a domesticated race of the insect is constantly maintained. Perhaps some of my correspondents will relate their experience.—*E. Newman.*]

Exchanging.—The discontinuance of the Exchange Club, which has been carried on by myself and Mr. Marsden since 1868, would seem to suggest the desirability of a little explanation, as the experience we have gained may prove useful, should any such club be established by others, which we hope will some day be done. Notwithstanding the inconvenience of a defective centre, like Gloucester, where the deficiency of entomologists rendered the work too onerous, the practicability of a legitimate system of exchanging has been fairly demonstrated during the three seasons of the club's existence. The subscription being fixed so low as half-a-crown, and the expenses of bringing the club before the entomological public being much greater the first two years than they would be subsequently, left a considerable deficit at the end of 1869; but this was nearly obliterated in 1870; and had the club been continued another season there would have been a small credit-balance to purchase insects for distribution. But the secretary, Mr. Marsden, has been obliged to resign from ill health. The results of the three years may be roughly tabulated thus:—

	No. of members.	Of whom contributed.	No. of specimens received.
1868	26	20	2800
1869	46	33	5000
1870	42	31	5200

Of these 13,000 specimens fully half were of little or no value, on account of their being badly set or in bad condition; but all that have been worth sending, and many, indeed, that were not, have been distributed. Many very good local species have been sent to the club, but no rarities, which were, in fact, not to be expected. Every effort was directed to make the distribution as fairly as possible, in proportion to the relative value of the specimens received; and with the exception of two members in 1869, and two in 1870, all have expressed themselves satisfied and pleased with the exchange, and in these instances it was found impossible to make a full return owing to the few species desiderated. If the London entomologists were to take this matter of exchange up, with a working committee of half a dozen or so, and some leading entomologist as president, a really good club could be formed. Should any such step be taken, we shall be most happy to assist in any way that we can.—*Joseph Merrin; Gloucester.*

[This explanation or apology seems scarcely required. It may be taken for granted that entomologists will not send their best captures for distribution in this manner: the *quid pro quo*, or rather the two or three *quids* for one *quo*, is the indispensible condition of exchangers; yet they will, doubtless, be willing to send duplicates, for which there is no more promising market. Mr. Merrin's statistics show this in the most unmistakeable manner: "out of 13,000 specimens fully half were of little or no value, on account of their being badly set or in bad condition." This is a matter of course, and always will be so. Entomologists who offer to barter Rapæ for Daplidice, Urticæ for Antiopa, and so forth, as we are apprised by the exchange lists, would scarcely be likely to send their Daplidices or Antiopas to an exchange club.—*Edward Newman.*]

Canary Tick.—Through the kindness of Mr. Whitehead, of Blenheim Court, Dulwich, I have lately become acquainted with an Acarus, which infests canaries and, probably, other cage birds; it seems to travel principally by night, and may be induced to quit the cage by covering it with a white handkerchief. In the morning the ticks will be found dotted all over the handkerchief. I am prepared to describe and name this little mischief-maker, for so it may be called, as it seems to be a sore plague to the canaries. I delay, however, in the hope that some of my readers may be able to give me their experience, and say whether they are acquainted with the animal, and whether it has been characterised.—*Edward Newman.*

Extracts from the printed Proceedings of the Entomological Society, February 6, 1871.

Mr. Eedle's Scotch Lepidoptera.—Mr. Bond exhibited several species of Lepidoptera taken in Perthshire, last season, by Mr. Eedle, *viz.* Pachnobia alpina, being the third known British example; a fine variety of Larentia cæsiata; a very dark form of Thera juniperata, being its ordinary condition in the Rannoch district, and remarkable also for the time of its appearance, which was nearly two months earlier than in England; Gelechia boreella; and finally Hyponomeuta evonymella, *L.* (Padi, *Zeller*), the larva of which Mr. Eedle had observed to cover the trees of bird-cherry with its webs to a remarkable extent,—a piece of web exhibited was a yard long.

[These interesting insects have already been fully noticed in the 'Entomologist,' v. 199, which see for a full report of Mr. Eedle's captures in Scotland, in the spring of this year.—*E. Newman.*]

Imago of Atalanta with head of Larva.—Mr. Bond also exhibited an example of Vanessa Atalanta, bred by Mr. Jackson, which still retained the larval head. Prof. Westwood said that this form of monstrosity was very rare. He could call to mind only four recorded instances: (1) Nymphalis Populi, (2) Gastropacha quercifolia (3) Dytiscus marginalis in the British Museum, and (4) a Syrphus in the Oxford Museum.

New British Beetle.—The Rev. H. S. Gorham exhibited a beetle new to the British list, concerning which he made the following remarks:—"*Oxytelus fulvipes* of Erichson. Of the indigenous species most allied to O. rugosus, *Fab.*, from which it differs as follows: the head, thorax and elytra are much less closely punctured, especially the former, which also lacks the depression of the clypeus, conspicuous in rugosus; this part also being shining instead of opaque. The thorax is proportionally shorter and more narrowed towards the base; the lateral margins obsoletely crenulate. The legs and first four joints of the antennæ are testaceous; these joints, however, in my specimens are spotted with pitchy. The third joint is shorter than the second; whereas the reverse is the case in rugosus. In the male characters beneath, this species presents considerable differences,—the fifth segment being simple (in rugosus the margin bears a conspicuous tubercle), and the seventh has the margin simply bisinuate. One male and three female specimens, found by myself, near a wet spot in a wood, near Needworth, Staffordshire, January, 1870. It is found also in Germany, Austria and France."

Proceedings of the Haggerstone Entomological Society.

October 6, 1870.—Mr. Eedle, Vice-President, in the chair. Mr. Elisha exhibited some very large specimens of Epunda lichenea. Mr. W. Harper, preserved specimens of the larvæ of Deilephila Galii. Mr. Pryer, Leucania albipuncta. Mr. Eedle, two specimens of the rare Noctua, Pachetra leucophæa. Mr. Boden, fine specimens of Heliothis marginata.

October 13, 1870.—Mr. J. Russell exhibited specimens of Cymatophora ocularis, Mamestra abjecta, Agrotis cinerea, Catocala sponsa and C. promissa. Mr. Eedle, a captured specimen of Deilephila Galii. Mr. Franklin, Epunda lutulenta. Mr. Moore, a beautiful specimen of Xylina Zinckenii, captured by him, in Darenth Wood, on the 2nd of the month.

October 26, 1870.—Mr. E. Barlow, President, in the chair. Mr. Lormier exhibited preserved larvæ of Smerinthus ocellatus, S. Tiliæ, S. Populi and Dicranura vinula. Mr. Healy, some living larvæ of Coleophora therinella.

October 27, 1870.—Mr. T. Eedle exhibited specimens of Ennomos erosaria and Halias quercana. Mr. J. Moore, Lythria purpuraria. Mr. Jackson, an example of Vanessa Atalanta having a larval head. Mr. J. Russell, fine specimens of Emmelesia tæniata.

Ninety-seven members attended the meetings this month.

November 3, 1870.—Donations to the Cabinet:—Mr. J. A. Clark exhibited specimens of Cossus ligniperda, Catocala nupta, Zygæna Filipendulæ, Erebia Medea, Macroglossa Stellatarum and Arctia lubricipeda. Messrs. Barry and Bartlett, specimens of Phlogophora empyrea. Mr. Eedle, fine specimens of Argyrolepia æneana.

November 10, 1870.—Mr. Scott, who was present as a visitor, exhibited a remarkable variety of the male of Argynnis Paphia.

November 24, 1870.—Donation to the Funds:—Mr. T. Cooke, of 513, New Oxford Street, having presented the funds of the Society with one guinea, an unanimous vote of thanks was passed to that gentleman for his kindness. Mr. J.

A. Davis exhibited specimens of Ptilophora plumigera and Notodonta dodonæa.

During this month seventy-seven members attended the meetings of the Society.

December 1, 1870.—Mr. J. Peed, Mr. Scott and Mr. E. Fitch were elected members. Mr. Davis exhibited Odontia dentalis. Mr. Boden, specimens of Eupithecia consignata and Xanthia aurago.

Half-yearly Meeting.—Messrs. Barlow, Harper and Gates were re-elected to fill the respective offices of President, Treasurer and Secretary; Vice-President, Mr. Bush; Assistant Secretary, Mr. Barry; Librarian, Mr. Healy; and Curator, Mr. Davis. Committee of Management, Messrs. Bramley, Bryant, Bartlett, Eedle, Healy and Woodage.

December 8, 1870.—Mr. Meek exhibited specimens of Lemiodes pulveralis and Argyrolepia æneana. Mr. Barlow, living larvæ of Zeuzera Æsculi. Mr. Danby was elected a member.

December 23, 1870.—Mr. J. A. Clark exhibited a specimen of Catocala Fraxini. Mr. Meek, Acronycta Alni and Madopa salicalis. Mr. Eedle, a variety of Pieris Rapæ, having the apical spots much larger than usual, also the veins of the hind wings black.

Ninety members attended the meetings this month.

January 5, 1871.—Mr. E. Barlow exhibited specimens of Selenia illustraria and Pericallia syringaria.

January 12, 1871.—Mr. Elisha exhibited specimens of Phoxopteryx ramana, Stigmonota lunulana and Catoptria pupillana.

January 26, 1871.—Donation to the Cabinet:—Six specimens of Sesia philanthiformis, by Mr. Warrington. Mr. Boden exhibited specimens of Cirrœdia xerampelina, Acronycta auricoma, Acosmetia caliginosa and D. rubiginea. Mr. Healy, a box showing the economy of Euura Gallæ of Newman, a species of sawfly, bred by him from larvæ forming galls on the leaves of Vaccinium Vitis-idæa, discovered by Mr. Eedle in Scotland (Perthshire), in the month of June, 1869, the imagos being produced the following May.

Eighty-three members attended the Society's meetings this month.

THE ENTOMOLOGIST.

No. 89.] APRIL, MDCCCLXXI. [PRICE 6d.

List of Diptera collected in Egypt and Arabia, by J. K. LORD, Esq.; *with Descriptions of the Species new to Science, by* F. WALKER, Esq., F.L.S.

(Continued from p. 263.)

Gen. ANTHRAX, *Fabr.*

35. *A. tenuis. Male.*—Black, slender, with cinereous tomentum. Epistoma testaceous in front, not prominent. Antennæ lanceolate. Thorax with a few white bristles on each side. Abdomen tawny beneath and along the hind borders of the segments on each side above. Legs piceous. Wings pellucid; veins black, testaceous towards the base; fore branch of the cubital vein deeply undulating; two submarginal areolets. Halteres whitish. Length of the body 4 lines. The specimen described is somewhat injured. Harkeko.

Gen. BOMBYLIUS, *Linn.*

36. *B. sericeus*, Meig. Zweifl. ii. 203. Cairo. Inhabits Europe.

37. *B. senex?* Hoffm. Meig. Zweifl. ii. 216. Mount Sinai. Inhabits Europe.

38. *B. miscens. Female.*—Black, thickly clothed with silvery white hairs. Proboscis much longer than the thorax. Scutellum red. Abdomen with many black bristles along each side and at the tip. Legs tawny, minutely setose; femora black; fore femora tawny towards the tips. Wings pellucid; veins black, tawny or testaceous towards the base and along the costa. Halteres testaceous. Length of the body 6 lines. Hor Tamanib. Harkeko.

39. *B. nivifrons. Male.*—Black, thickly clothed with snow-white hairs. Proboscis much longer than the thorax. Scutellum testaceous, except at the base. Abdomen most densely clothed with long hairs on each side and at the tip. Legs tawny, minutely setose; femora black. Wings cinereous; veins black, tawny or testaceous towards the base. Halteres

white. Length of the body 5 lines. Cairo. Var. β. Scutellum red, black at the base. Abdomen red, black at the base above and with a short stripe of three transverse black spots, which successively decrease in size. Dahleck.

40. *B. exiguus. Female.*—Black, thickly clothed with shining whitish hairs. Head with a few black hairs on the vertex. Proboscis much longer than the thorax. Legs pale testaceous. Wings pellucid; veins black, testaceous towards the base. Halteres whitish. Length of the body 2½ lines. Hor Tamanib.

Gen. PHTHIRIA, *Meig.*

41. *P. minuta.* Volucella minuta, *Fabr. Syst. Antl.* 115. Cairo. Tajura. Inhabits Europe.

Gen. DIMORPHOPHORA.

Male.—Body slender. Head broader than the thorax; epistoma vaulted, very prominent. Eyes large, nearly contiguous on the vertex; facets very small. Proboscis rather shorter than the thorax; its sheaths hooked at the tips. Antennæ very short; third joint short, conical; arista more than twice the length of the third joint. Thorax broader than the abdomen; scutellum semicircular. Abdomen tapering from the base to the tip, about twice the length of the thorax; apical tuft very small, compressed. Legs rather stout, moderately long. Wings narrow; two submarginal areolets.

42. *D. syrphoides. Male.*—Black. Head pale yellow, black behind. Eyes iridescent. Proboscis pale yellow, black at the tip. Antennæ pale yellow; third joint and arista black. Thorax with yellowish white hairs in front and on each side; a callus along each side and scutellum yellow. Pectus pale yellow; disk mostly black. Abdomen orange; first and second segments black; second with a transverse yellow spot on each side; each of the following six segments with a black spot on the fore border, and with a transverse black spot on each side; hind borders of the segments white; tip and under side and legs yellow. Hind femora with black tips. Wings pellucid; veins black. Halteres yellow. Length of the body 6 lines. Wâdy Gennèh.

Fam. MIDASIDÆ.—Gen. MIDAS, *Wied.*

43. *M. maculatus. Male.*—Black. Head with short hoary

hairs; epistoma tawny. Club of the antennæ fusiform, a little shorter than the preceding part. Thorax tawny behind and with four tawny stripes. Abdomen tawny, with six longitudinally elongated black spots on each side; first segment not spotted; second with a transverse black spot on each side of the hind border. Legs tawny; hind legs with short bristles beneath. Wings cinereous, with brown stripes along the veins; veins black, tawny at the base. Length of the body 6 lines. Mount Sinai.

Fam. EMPIDÆ.—Gen. PLATYPALPUS, *Macq.*

44. *P. flavipes.* Empis flavipes, *Fabr. Ent. Syst.* iv. 406. Cairo. Inhabits Europe.

Gen. DRAPETIS, *Meig.*

45. *D. ænea. Female.*—Æneous, shining. Antennæ, abdomen and legs black. Tips of the hind femora and of the hind tibiæ tawny. Wings pellucid; veins black, tawny at the base. Length of the body 1 line. Cairo.

Fam. SYRPHIDÆ (SYRPHINÆ).—Gen. SYRPHUS, *Fabr.*

46. *S. latiusculus. Female.* Æneous. Head yellow; vertex and hind border black, the latter and the sides of the thorax with whitish hairs. Scutellum yellow; disk piceous. Abdomen black, elliptical, broad; first, second and third segments with a chalybeous band on the hind border, and with an abbreviated and interrupted yellow band on the disk of each; the two spots of the first yellow band distinctly transverse; those of the second band and of the third slightly oblique; hind borders of the third and fourth segments yellow; fourth segment chalybeous; under side yellow, with an abbreviated black band on each segment. Legs yellow; hind femora black, their tips yellow; four anterior femora black at the base. Wings pellucid; veins black, yellow at the base. Halteres yellow. Length of the body 5 lines. Wâdy Ferran. Mount Sinai.

47. *S. interrumpens. Female.* Æneous. Head yellow; vertex and hind border æneous, the latter and the thorax with short yellowish hairs. Scutellum yellow. Abdomen black, chalybeous at the base and at the tip; first, second and third segments with a chalybeous band on each hind border; three broad yellow bands; first band narrower towards the middle, where it is interrupted; second and

third deeply notched on the hind side; fourth segment yellow, with a transverse black spot in the disk; under side like the upper side. Legs yellow. Wings pellucid; veins black, yellow at the base. Halteres yellow. Length of the body 4½ lines. Cairo. Wâdy Nash.

48. *S. turbidus. Male.* Æneous. Head yellow; vertex and hind border æneous, the latter and the thorax with short yellowish hairs; a black streak extending to the peristoma. Antennæ black. Scutellum dingy yellow. Abdomen black, with chalybeous bands; three large transverse yellow spots on each side; first pair of spots narrowest on the inner side; second and third excavated on the fore side, narrowest on the outer side; third and fourth segments with yellowish hind borders; under side like the upper side. Legs yellow; femora black, yellow towards the tips. Wings cinereous; veins black. Halteres pale yellow. Length of the body 4¼ lines. Cairo.

49. *S. Ægyptius*, Wied. Auss. Zweifl. ii. 133. Wiedemann conjectures that this may be a variety of S. scutellaris, *Fabr. Syst. Antl.* 252, a native of Hindostan. Cairo. Hor Tamanib.

Gen. MELITHREPTUS, *Loew.*

50. *M. calceolatus.* Sphærophoria calceolata, *Macq. Dipt. Exot.* ii. 2, 104, pl. 17, f. 7. Cairo.

ERISTALINÆ.—Gen. ERISTALIS, *Latr.*

51. *E. tenax.* Musca tenax, *Linn. Syst. Nat.* i. 2, 984. Cairo. Mount Sinai. Inhabits Europe.

52. *E. tæniops*, Wied. Zool. Mag. ii. 42; Auss. Zweifl. ii. 182. The markings of the abdomen are variable. Cairo. Wâdy Nash. Inhabits South Africa.

53. *E. taphicus*, Wied. Auss. Zweifl. ii. 191. Cairo.

54. *E. horticola.* Musca horticola, *Deg. Ins.* vi. 60. Cairo. Inhabits Europe.

55. *E. punctifer. Female.* Chalybeous, with hoary tomentum. Head with a black shining callus between the antennæ and the mouth. Eyes bare, ferruginous, with numerous black points. Antennæ tawny. Thorax with four shining stripes of the ground hue; scutellum of the ground hue; hind border dingy testaceous. Abdomen black, dingy testaceous at the base, with four pale testaceous bands, and

with three chalybeous bands. Legs black; knees and four anterior tibiæ dingy testaceous; tarsi piceous. Wings pellucid; veins black, testaceous towards the base. Halteres testaceous. Length of the body 4—4½ lines. Tajura.

FRANCIS WALKER.

(To be continued.)

Entomological Notes, Captures, &c.

Description of the larva of Acidalia rubricata.—On the 13th of August last I received, through the kindness of the Rev. J. Hellins, a young larva of this species. It fed on Polygonum aviculare, growing slowly until the early part of October, when it began to hybernate. On the 15th of that month I took a description as follows:—Length nearly half an inch, slender, but of average Acidalia proportions; head larger than the second segment, notched on the crown; body cylindrical, and of nearly uniform width, but slighly thickening posteriorly; segmental divisions distinct, each finely ribbed transversely, which gives the skin a rather rough appearance, being also rough to the touch; general colour grayish brown; head gray, marked with smoke-colour, medio-dorsal line indistinct to the tenth segment, faint rust-colour; on the remaining posterior segments broad and distinct, dull black. When seen through a lens, however, the faint rust-coloured dorsal line seems to run very narrowly through the broad black of the posterior segments; on each of the other segments the black appears in the shape of two short parallel black marks, one on each side the dorsal line; there are no perceptible subdorsal lines; spiracular lines puckered, lighter than the ground colour: ground colour of the belly similar to the dorsal surface; it is bordered on each side by a conspicuous dark-smoky subspiracular line. When at rest the food-plant is grasped by the claspers, and the body bent in a curved position, more so than in any other Acidalia larva I have noticed. In this position my larva remained a great part of the winter, but the very severe weather we had appeared to have been too much for it, as I found it dead on examining my hybernating larvæ in the early part of February. What its food is in a natural state, I believe is as yet unknown.—*Geo. T. Porritt; Huddersfield, March* 3, 1871.

The Strychnia and Camphor Crotchets.—I find on enquiry that Mr. Doubleday uses a weak solution of bichloride of mercury (corrosive sublimate) in alcohol to preserve Lepidoptera from the attacks of mites and from mould, which it effectually does if properly applied, but I was mistaken in supposing that it prevented specimens from becoming greasy. Mr. Doubleday opens the abdomens of the larger species, carefully removes the contents, and then puts in some finely-powered pipe-clay to absorb any grease that may remain: when this is effected the pipe-clay is taken out and a small quantity of fresh pipe-clay is placed in the abdomen, which is then filled up with cotton-wool cut short: if a small quantity of grease should afterwards exude (which is not often the case) it is easily removed with a little highly-rectified spirits of turpentine and powdered pipe-clay. When the insects are small they are allowed to remain in very pure turpentine for an hour or two. They are then placed for a minute or two on blotting-paper to drain, and lastly covered with fine-powdered pipe-clay, which will easily brush off the specimens when they are dry.—*Edward Newman.*

Nights for Sugaring.—I have taken the liberty to write these few lines, hoping that you may be able to solve the following difficulty, *viz.* "That after having selected nights which seemed, by Dr. Knagg's book, to be likely to be favourable, and after having made the sugaring mixture as he directs, and boiled it to the same thickness as treacle, neither I, nor any of my fellow-collectors here, have met with the least success during the last two seasons; and one gentleman, who has collected all his life in the neighbourhood, has never had any better luck." The soil is chalk and greensand, very prolific in all Lepidoptera. Would you mention the best time of year and nights for sugaring, and the consistency the sugar should be made of, and whether, on most nights seeming suitable, one ought to have success, and if it is the exception rather than the rule?—*J. S. Butler; Netherton House, near Hungerford, Berks.*

[I am not acquainted with Dr. Knagg's directions; but, at

p. 89 of Mr. Greene's invaluable 'Insect-Hunter's Companion,' you will find receipts for all the mixtures that have been found successful.—*E. Newman.*]

Exchanging.—Mr. Newman's note, appended to Mr. Merrin's communication, on this subject, in the March number of the 'Entomologist,' appears to me to be somewhat wide of the mark. That foolish people make such offers as Rapæ for Daplidice, &c., does not prove or falsify the benefits an exchange club would confer on the more straightforward class of collectors, especially if established on a somewhat broader basis than hitherto. Indeed, I would ask why a Botanical exchange club can be satisfactorily continued, and not a Lepidopterists'? I would like to lay the following points before the readers of the 'Entomologist,' and urge some of their London brethren to take the matter seriously in hand. *First.* The old club succeeded; and it was only in compliance with urgent medical directions that I discontinued my connection with it, when, of course, the labour became too heavy for Mr. Merrin to carry on *alone*. *Secondly.* The greater part (in fact, nearly all) of the members were perfectly satisfied with the exchanges made. *Thirdly.* Although no *rare* species were sent to us, very many good local ones were (such as Ichneumoniformis, Elymi, Blomeri, Rubricata, Lapidata, &c.); and a great improvement was made in the condition of the insects sent from year to year. Had the club been continued, all bad or indifferent specimens would have been rigidly returned to the senders or destroyed; but, on first starting, this was held to be too discouraging to young entomologists. *Fourthly.* Since the discontinuance of the club I have had numerous letters from members expressive of regret at its discontinuance, and of hopes for its re-establishment; and, of the forty-two members of 1870, I feel assured thirty (at least) would join a new club; and were this established, under the auspices of a few better-known entomologists, this number would be greatly augmented from the provinces, and many London collectors would also join. Thus a club could be started on a solid foundation; and, to such a one, the better class of entomologists would gladly send their duplicates (after supplying their *immediate* friends), in preference to answering advertisements from unknown collectors, and amongst which we see such absurd offers as those pointed out by Mr. Newman.—*Herbert N. Marsden; Gloucester, March* 9, 1871.

Erebia Ligea.—Has not Erebia Ligea as great a claim to be considered British as Doritis Apollo (or even Polyommatus Hippothoë), it being, I understand, formerly found in the Isle of Arran?—*James H. Rowntree; Scarborough, March* 7, 1871.

[Erebia Ligea and Doritis Apollo are about on a par in this matter. I think neither has a claim; but Hippothoë certainly existed in a state of nature, in the fens, some years ago. I have seen fifty living larvæ collected there, and have specimens bred from some of them.—*Edward Newman.*]

Economy of Hesperia Sylvanus.—It was, I believe, the opinion of the old entomologists that there was only one annual brood of this species. In that case, I presume, the assumption must have been that the May individuals seen on the wing had hybernated. I have myself taken specimens in early summer, in such very bad condition that it was difficult to persuade oneself that they had not long left the pupa. Sylvanus may be found at many seasons, in June and July, as well as in May and August. Its life-history may prove to be this: from eggs, deposited in the summer, larvæ emerge, which feed for a time and then hybernate, feeding again in spring, and becoming adults in May; from these butterflies appear at the end of May or early in June, continuing frequently on the wing for some time, and depositing eggs, which yield another brood of larvæ and August butterflies. In some years it may be that the spring larvæ, growing slowly, produce butterflies at a later date, and then the larvæ, of which they are the parents, may not attain their full size untill the ensuing spring.—*J. R. S. Clifford.*

Scarcity of Hesperia Linea.—I can corroborate the statement that this species is scarcer of late years. In Hertfordshire it occurred plentifully some twenty years ago, in places from which it seems to have disappeared; also in localities in North Middlesex, from whence it is not reported now. On Wimbledon Common, where it was once abundant, I see very few of late. In 1869 these butterflies were very numerous on the railway banks between Greenhithe and Northfleet, in Kent; and in meadows, near Swanscombe Wood, some stragglers.—*Id.*

The Breeding of Liparis Dispar.—Allow me to state, in reply to Mr. Melhuish, that the larvæ of the above species are exceedingly easy to manage in confinement. I have, in former years, reared nearly a whole brood more than once. The finest specimens I have ever seen of this particular race (if so it may be called), which is bred up in our cages, were fed upon willow and sallow; but these even were far inferior in dimensions to those individuals in collections, which were taken at large. As to the reason of the diminution in size, various speculations have been entertained. It has been asserted that these individuals are descended from others formerly taken in the North of England, where the species was supposed to have degenerated through an unfavourable temperature. Others attribute the dwarfing of the species to a withdrawal from this race, for some generations, of their natural food. There is no doubt the smallest specimens are produced from larvæ fed upon hawthorn, and oak also seems uncongenial to them. They will thrive more on the leaves of fruit trees, or on the willow, as before stated. The larvæ emerge about the beginning of April; nor do I think their appearance could be much hastened by heat, nor would it be desirable to hatch them out before food could be got. Possibly, by placing the larvæ in as far as possible a natural condition, and supplying them with an abundance of food, after some generations these home-bred individuals might be brought back to the typical size.—*J. R. S. Clifford.*

Boarmia perfumaria in the New Forest.—Whilst sugaring in the New Forest, at the end of last July, Mr. Milles and myself took a beautiful specimen of Boarmia perfumaria.—*Edward F. Bisshopp.*

Occurrence of Lepidoptera at Southend in June last.—Cucullia Umbratica; Euclidia Mi and Glyphica, common; Acidalia Subsericeata, not rare; Homœosoma Nebulella, several; Myelophila Cribrella, abundant; Penthina Marginana, several; Endopisa Pisana, common; Ephippiphora Trigeminana, common; Stigmonota Regiana, common; Dicrorampha Saturnana, common; Dicrorampha Sequana, common; Catoptria Citrana, several; Argyrolepia Æneana, rare; Argyrolepia Dubrisana, several; Coleophora Deauratella, six; and larvæ of Eremobia Ochroleuca and Hesperia

Linea.—*William Machin; 21, Argyle Road, Carlton Square, Mile End, London, March* 15, 1871.

Work on the Species of Coleoptera.—Can you kindly inform me of a book on Coleoptera, for a beginner, who has derived nearly all he knows from the chapter on Coleoptera written by you in Greene's 'Insect-Hunter's Companion.' Is there one published giving a description of all the British Coleoptera? something after the style of your 'Butterflies and Moths.'—*J. Wiglesworth; 1, Brougham Terrace, Liverpool, March* 13, 1871.

[I know of no work in which the species of British Coleoptera are described except Stephens' 'Manual of British Beetles,' which is out of print, although a copy may now and then be obtained second hand: but this work differs from both my 'Butterflies' and 'Moths,' inasmuch as it gives no figures of the species.—*Edward Newman.*]

Larva of Sesia Bembeciformis.—On Friday, March 3rd, when making an early visit to the woods, I observed, where the woodman had cut, some full-sized round sticks from the sallow stubs: a number of orifices were exposed, which, on examining, proved to be the work and habitat of a larva of creamy white colour, one and a half inch long, or more: the orifice measured about three-eighths to half an inch over, beginning from the root; the larva worked upwards.—*James A. Tawell; 30, Compton Terrace, Islington, March* 7, 1871.

[I think, in all probability, the larva was that of Sesia Bembeciformis.—*E. Newman.*]

Museum at Clifton College.—A Museum of Natural Science has been recently started in Clifton College. I shall thankfully receive any donations of Lepidoptera, however common, if in good condition. Of course, all expenses of carriage, &c., will be defrayed by me.—(*Rev.*) *J. Greene; 30, Apsley Road, Redland, Bristol.*

Parasites on Canaries.—I believe that the tick mentioned by you as infesting domestic birds is the same as that described and figured in Küchenmeister's 'Manual of Animal and Vegetable Parasites' as Dermanyssus Avium, belonging to the Acarine family Gammasidæ, and is allied to the mites we so often see parasitic upon Coleopterous insects, especially upon clavicorn and lamellicorn beetles. I have compared the mites found in bird-cages with the figure given of Dermanyssus Avium in Dr. Lankester's translation of the work I have mentioned ('The Manual of Animal and Vegetable Parasites,' by Fredrich Rüchenmeister, vol. ii.; published by the Sydenham Society). The figure accurately represents the species usually found in bird-cages, with the exception that it differs in the length of the legs, but perhaps I have only seen immature specimens. The description of its habits coincides almost exactly with that given in your last number. This author and several other German writers think that this mite has occasionally, under certain conditions, been found parasitic upon the human body; and this is a point on which I have sought, in vain, for further information.—*Henry Charles Lang; University College, London, March* 14, 1871.

[I have also been favoured with the following cutting from the 'Field' newspaper, of the 23rd of August, 1862.—*Edward Newman.*]

Parasites on Canaries.—In rooms birds ought to be more free from vermin than those bred in cages, simply because there are less haunts for the vermin than in cages, especially where there is much wood-work; and it gives the birds a better chance of ridding themselves of the pests by bathing and exercise. But in breeding seasons the nests are the principal haunts for the bug, owing to the young being in them. This shows the necessity of strict attention in supplying fresh nests. I always make a practice to give a clean one a day before hatching, and another in five or six days after. When giving the fresh nests dust them with the insect-powder, which I have adopted for years. I use both boxes and baskets, and to every fresh one I apply (before making the nest) inside train-oil, but, of course, not in any quantity to injure the old birds. This oil I have found of more service than anything else I ever used. At the commencement of the breeding season I make a mixture of camphor (dissolved in spirit of wine), turpentine and soft-soap, and dress all joints and crevices with a brush. Apply the oil to the ends of the perches. A solution of camphor, spirit of wine and turpentine may be used during the season, because it will easily find its way into the smallest crevice; but I find that when the wood has absorbed it the vermin will haunt there again. The solution is, for the time, deadly;

but cages well dressed with train-oil I have found to resist the vermin more than anything else,—in fact, to remain free from them during the season. Many object to the use of oil, being fearful of injuring their birds; but, after the cages have been well dressed and wiped, the birds can sustain no injury whatever, as the oil remains only in the crevices. Whenever a bug comes into contact with the oil death must speedily ensue, for the spiracles become stopped, and suffocation ensues as a matter of course. With respect to vermin, as proof of the serious effects caused by them, examine some of the bugs, and see how plump and red they appear after they have been devouring the blood of the birds; and also examine the young birds, in nests infested with vermin, when a few days old, and you will find that, though the old birds may feed them, their growth is checked, and they will appear pale and sickly. A want of colour in the young birds' mouths will tell, more than anything, that they are not doing well, and, unless this be remedied, they will soon die. If hens should breed well one year, it is no guarantee that they will do so another season; so do not suppose you are safe on this point, and calculate on so many young from them. Vermin may disappoint all hopes. Besides, there is no fixed rule how to treat hens, for they are like other living things, varying much in temperament, some being very familiar and others very timid. These matters you will prove by experience. However, under the most favourable circumstances, it is unwise to be continually meddling with the nests while containing eggs or young, for many a hen, that might have proved good, has been spoiled by so doing. Many imagine that when the old birds have fed their young for a few days, and then neglect them, that they must bear the blame as being unnatural parents; but there is a cause for so doing. It is at about this period that the mother becomes fonder of her offspring, and is fearful to leave her nest, and devours the food herself instead of supplying the young. I have no doubt that many breeders have noticed the hens continually rising up and, as it were, pecking at the inside of the nests. Why does this happen? Because the nest is troubled with vermin, and is every moment further weakening the young by robbing them of their life's blood. They at last become so helpless as not to rear up their heads for food, and death speedily finishes them. Fancy yourself annoyed with living torments, in proportionate size, robbing your veins, with a want of nourishment to supply the loss. Birds, in nests, are generally attacked most under their wings; and it is very often the case you will find some of the bugs in their ears. Now, the greater part of this may be prevented by supplying clean nests, well-shaped and rounded with a proper-formed iron or egg, making it resemble, as much as possible, the old ones containing the young birds, which, when taken away, may be destroyed by burning. Young birds, when caged off, should be put in thoroughly clean cages, and, at about five weeks old, they will begin to crack canary-seed. Encourage seed-eating by gradually taking them off egg and soft food. Supply fresh water daily, with good grit-sand in their cages. Keep the young out of draughts; for when once a young bird is seized with cold it is a chance it lives. Do not supply whole hemp-seed too soon; by so doing you try their tender mandibles. Be careful (if green food is at all given) in selecting only the seedy parts, such as the tops of groundsel, shepherd's purse and plantain; but all must be ripe. My choicest birds (Belgians) I never supply with green food after they are caged off, for it encourages purging. When purging does happen keep the birds warm, apply one or two drops of castor-oil, and after that give bread and milk sweetened with honey, and, if possible, soon remove the birds to a large cage or room, for a fly, which so much promotes strength. I do not advise anyone to keep their birds in damp places; but I have always found less or no vermin there exist.—*Geo. J. Barnesby; Abbey Street, Derby.*

The Tsetse.—The plains on the south side of the Lobombo Mountains, towards Delagoa Bay, was the only district where I met with the tsetse fly, and immediately below the mountain they seemed more numerous than at a greater distance. The belief of the natives in the dangerous character of the fly is universal; and I never heard any doubt expressed about it among the white hunters, many of whom have come to this district for many years. We were told that if we took our dogs over the mountains they would be bitten by the fly, would go blind in a few days, and die in ten days or a fortnight. The fly, which was pointed out to us as the tsetse, was very like a small horse-fly (cleg, as they are called in Lancashire); it was very common, and answered the description and picture, in Livingstone's first book, accurately. We were frequently bitten by them: the bite was very sharp, and felt like a red-hot iron run into the flesh, but it did not leave any mark or inflammation. I caught several, but mislaid them somewhere, as I have been unable to find them. The dogs were frequently bitten; and one of them went blind within a week, and died in about a fortnight. The other did not show illness for some time later; and, as we left him with some of our party, knew nothing more about him than that he died. The fly appears only at certain seasons, and in limited localities. The head of a Kraal, about thirty miles distant from the point, where we found the tsetse most abundant, told us at that time the fly was not in his district, and pointed to a heifer and some goats, which he said he intended to send away before the fly season came on. There is a general opinion that the fly is connected, in some way, with the larger game, elephants, rhinoceros, &c., and some think that it breeds in their dung; but I never heard of any proof of this. Mr. Erskine was the only person that I met with who expressed any doubt about the tsetse; but, as I have not seen his paper, I do not know why he doubts it. The fly district nearest to Natal is about twenty days' journey distant. Our horses and oxen we did not take into the fly country at all.—*E. C. Buxton.*

[Mr. Buxton has kindly sent the information in reply to my note, at p. 217 of this volume.—*E. Newman.*]

Death of Mr. Jethro Tinker.—Mr. Jethro Tinker departed this life on the 10th inst., and was interred, at the parish church of Mottram-en-Longendale, on the 15th. He was one of those old hard-working entomologists and botanists to whom we, of the present day, owe so much, having followed Entomology and Botany for nearly seventy years. He was, for some time prior to his death, president of the botanical section of the Stalybridge Naturalist's Club; and was ever ready to impart information and instruction to anyone seeking knowledge. He had lived to see many changes in the scientific world, being in his eighty-third year. His loss will be much felt by us in this part of the country; and I have no doubt but many, in all parts, will be able to recall to memory many of his acts of usefulness in the Science of Entomology. It is intended to raise a monument to his memory in Stalybridge; and already a goodly amount of money has been subscribed by the friends and admirers of Natural Science; and should any of his friends, elsewhere, feel desirous of contributing to so praiseworthy an object, their subscriptions can be directed to the Secretary of the Stalybridge Naturalist's Club, and will be duly acknowledged. Perhaps, if any should wish to transmit through you, you would oblige us by receiving their donations, and transmitting them to us at your convenience.—Communicated by *D. Jolliffe; Secretary to the Stalybridge Naturalist's Club, Stalybridge, March* 20, 1871.

[Mr. C. S. Gregson has kindly sent another notice.—*E. Newman.*]

Death of Mr. Henry Denny, A.L.S.—Mr. Henry Denny, the curator of the Leeds Philosophical and Literary Society, died on the 7th of this month (March), at the age of 68. The previous part of his life was spent in Norwich, of which town he was a native. He was the first paid curator the Leeds Philosophical Society has had. His office was at first described as that of sub-curator, and he entered upon his duties with the recommendations and "decided testimonials of gentlemen eminent for scientific attainments, and fully competent to form an opinion of the requisite qualifications for the post." In the first report, presented after Mr. Denny's appointment, the council stated that they had found him in every way qualified for his office; and, in the succeeding reports up to that of 1870, when the Society celebrated its jubilee, the council—although always changing hands, and now entirely changed from what it was when Mr. Denny entered the service of the Society—scarcely ever neglected the opportunity of referring to the advantages conferred upon the institute through the exertions of its curator. In the last report testimony is borne to the ready munificence of the Leeds townsmen in contributing to the completeness of the Society's museum, a liberality, it is added, "evoked and guided by the knowledge and untiring energy of its curator, Mr. Denny." It was thus that Mr. Denny made the museum what it is. Wherever he found missing links in the chain of natural history, archæological or geological specimens that were being formed by the Society, he was never at rest until, in the first instance, he discovered an object that would help to make the chain complete; and, in the second place,—not so difficult a matter as the first, but an undertaking, nevertheless, requiring much discrimination,—until he found some friend to the Society who was willing to increase its stores. And so the work went on from year to year; Mr. Denny never happier than when, at the commencement of each session, he could read long lists of contributions, and found the lecture-table too small for the first public presentation of newly-acquired treasures. The acquisition of specimens, however, does not represent the most important part of Mr. Denny's duties. So soon as he became connected with the association he set himself to arrange and classify the objects under his care; and as these objects increased, and the building in which they were displayed was extended, he found before him duty requiring the closest application and the exercise of the greatest care. In this work he received much assistance from the late Mr. John Hey, and the result was that he had not been curator more than a very few years before the museum received as thorough a re-organisation as was then possible. It was not until 1858, however, that that admirable arrangement of the specimens, which is now so pleasant a sight to every visitor to the museum, was fairly commenced. In that year the arrangement was improved in anticipation of the visit to Leeds of the British Association, and Mr. Denny then succeeded in completing several important groups in the animal kingdom that were either wanting or imperfectly represented. During the session 1831—3 Mr. Denny was appointed an honorary member of the Society; and, in the course of time, his designation of sub-curator was withdrawn in favour of the name of general curator and assistant-secretary, which more clearly indicated the position he held of late years. In the session 1849—50 a series of meteorological instruments were presented to the Society; and with these, and other instruments subsequently acquired, Mr. Denny was in the habit of filling up the very elaborate and interesting tables provided by the British Meteorological Society. He was ever active, but never too busy to be inattentive to the most casual visitors to the Institution, or to give information, regarding the museum and matters in which the Society has an interest, to all to whom such information was likely to be of service.

THE ENTOMOLOGIST.

No. 90.] MAY, MDCCCLXXI. [Price 6d.

Answers to Correspondents.

[I have found so much time occupied in writing a separate letter to every querist, that I have at last determined to resort to this plan of answering queries *en masse.* None of the letters answered in this number of the 'Entomologist' were intended for publication, and, therefore, I do not give the names of my correspondents, but I will gladly do so whenever requested. In all cases I propose to add any collateral information I may possess and can compress into a few lines, even although not definitely required by my correspondent.—*Edward Newman.*]

Mr. Doubleday's Health. — Very many inquiries have reached me respecting my friend H. Doubleday, who has been absent from home for four months in consequence of illness. I am now able to hand my readers the agreeable information that his health has improved, and he has returned to his old residence at Epping. I trust that his life may be prolonged for some years, and I hope he will be able to pursue his favourite studies in Natural History. Should this be the case I have no doubt that his zeal in assisting others will be as great as ever; but his medical adviser wishes him to abstain from much exertion at present.

Sirex Juvencus.—The mummy-like objects in the deal are specimens of Sirex Juvencus, a timber-eating insect of the hymenopterous order Phytophaga: the extraordinary difference amongst them in size is not specific; it is usual for timber-feeding insects to vary in this remarkable manner; the difference in colour is sexual; those with yellow bodies and black hind legs are males; those with steel-blue bodies and yellow hind legs are females. Nevertheless, there appear to be three species inhabiting this country, and each confines itself to a single species of fir; these are:—1. *Laricis,* with black antennæ, and a black tip to the abdomen in the male:

the larva feeds in larch wood (*Pinus Larix*). 2. *Sylvestris*, with black antennæ, and the male without the black tip to the abdomen, which is entirely yellow: the larva feeds on the wood of the Scotch fir (*Pinus sylvestris*). 3. *Abietis*, with antennæ black at the tip and yellow at the base: the larva feeds on the wood of the spruce fir (*Pinus abies*). Two of these insects have probably been introduced into Britain, seeing that the trees on which they feed are not considered to be native. Another large and rather common species of Sirex, S. Gigas, has yellow antennæ, and a yellow-bodied female with one or two black bands. Why all the specimens sent me in the piece of wood should have died I cannot say.

Roses of the Larch.—Everyone must have observed the beautiful little pink roses standing erect on the larch twigs at this time of the year. A singular and ingenious hypothesis was started last year that these were galls, and were produced by the puncture of an undiscovered species of Cynips. This idea having been ventilated both on the Continent and in Britain, I was induced to ask my friend Professor Oliver, of Kew, as to their true nature; and he decides, without hesitation, that they are the normal female blossoms of the larch, and kindly permits me to use his name in publishing this decision.

Galls of Quercus toza.—The large and beautiful galls from the West of France are produced on the Quercus toza by the puncture of Cynips Quercus-tozæ, an insect named by Fabricius.

Bee of the Egyptian monuments.—The bee sent me as obliterating the sculpture on Egyptian monuments is Chalicodoma sicula, one of the mason bees or mud-builders. It is thus, in obedience to a natural instinct, robbing us of one of the most interesting records of bygone ages, for it seems highly improbable, or, indeed, almost impossible, that these sculptures should ever be restored to their pristine beauty and sharpness by the removal by human hands of this insect masonry.

Larva in Elm wood.—The larva is that of the Leopard moth (*Zeuzera Æsculi*). It is by no means an uncommon thing to find this larva in elm. It has done great damage to the elms in St. James's Park, where the perfect moth may be found in the summer by examining the trunks of the trees in the early morning, that is between four and five o'clock: after the latter hour most of the moths fall a prey to the irrepressible sparrows.

Red Velvety Acarus.—The insect sent is the Acarus holosericeus of Linneus, Trombidium holosericeum of Leach. This beautiful creature is *not* the red spider of gardeners, which, I think, is not to be found at this early season of the year. The Trombidium is apparently harmless; it crawls over all kinds of low plants without doing them any apparent injury, and lays its eggs on stones: these eggs have sorely puzzled our microscopists, and have been described as Fungi, to the great delectation of entomologists, who are rather too apt to ridicule the labours of that unlearned body. Should the time ever arrive when Microscopy and Entomology shall go hand in hand, important discoveries will certainly result.

Acarus in Sheep.—In reply to three inquiries on this annoying animal, I regret to acknowledge my inability to give any available information. Every farmer who has observed and examined it declines to distinguish it from the tag or sheep-tick, so universally known as an inhabitant of wool. This last is very familiar to entomologists under the name of Melophagus ovinus; it is one of that anomalous group of dipterous insects, the eggs and larvæ of which are never extruded by the usual process, but pass these stages within the abdomen of the mother: when full grown they change to an egg-shaped chrysalis, which is extruded by the ordinary channel for the passage of an egg. In the second volume of 'Transactions of the Wernerian Natural History Society of Edinburgh' is an excellent paper, by Dr. Leach, on these curious insects. The specimens, however, which have been sent me for examination, have no affinity with the Melophagus, but belong to the genus Ixodes of the tribe Acaridea, and are certainly allied to the dog-tick, Ixodes Ricinus.

The Tsetse.—After reading Mr. Buxton's note (Entom. 284) I think there must be a general feeling of regret that so accomplished an entomologist should traverse the Tsetse region, should be frequently bitten by a Hematopota or "cleg," should prove from personal experience that its bite left no mark or inflammation, and yet should remain satisfied with the facts that "the belief of the natives in the dangerous character of the fly is universal," and that "he never heard any doubt expressed about it among the white hunters." This surely is no proof of the existence of such a formidable insect as the Tsetse is represented to be. All that Mr. Buxton's note proves is that "clegs" in South Africa are numerous, and that their bite is innocuous to human beings.

Benzole for destroying mites.—Mr. C. E. Holford inquires whether chloroform is the best remedy for mites in insect cabinets. I think not: I much prefer benzole.

Eastern Entomological Society of London.—This Society, established in 1862, held a conversazione at its rooms, 333, Mile End Road, E., on the 19th and 20th of the present month; the company, consisting of the members and their friends, exceeded four hundred in number; and many objects of great interest were exhibited, including seventy boxes of British insects, illustrating all the families of our native Lepidoptera, and a considerable number of Coleoptera, Diptera, Orthoptera and Hymenoptera, among which were many rare and some unique specimens. Mr. Machin exhibited two well-filled boxes of European Lepidoptera; and Mr. Chitty a specimen of Cabera pusaria suffused with lead-colour. Upwards of one hundred and fifty volumes on insects were on the table, and among them Curtis's 'British Entomology,' Stephens's 'Illustrations of British Entomology,' Drury's 'Exotic Insects,' Wilkes' 'British Insects,' and Humphrey's 'British Butterflies and their Transformations.' There were a great many novelties for capturing insects shown, such as nets, sugaring-apparatus, larva-tins, laurel-boxes, setting-boards, drying-houses, collecting-boxes, and every improvement known up to the present time; also several most ingenious contrivances for preserving larvæ, which were exhibited by Mr. Dugwell.

Nyssia lapponica in Scotland.—Mr. Bond informs me that the Rev. Mr. Curzon possesses a specimen of Nyssia lapponica, taken by a collector of the name of Warrington, whom he employed this spring to search the Rannoch district, especially with the view of obtaining Petasia nubeculosa.

Prizes for Collections of Economic Entomology.—The following prizes have been offered by the Royal Horticultural Society:—1. A prize of £10 for the best collection of British insects injurious to any one plant, as the oak, pine, cabbage, wheat, &c. (the choice of the plant being left to the competitor). The insects to be shown as much as possible in their various stages of development,—eggs, larva, chrysalis and perfect insect. In judging a preference will be given to those collections which most successfully illustrate the life-history of the insect, and exhibit the mischief done, whether shown by specimens, drawings, models, or other means. Examples of the application of drawings, models and specimens to this purpose may be seen in the Society's collection in the South Kensington Museum. 2. A second prize of £3 for the second-best collections. 3. A prize of £5 for the best miscellaneous collection of any branch of British Economic Entomology, similarly illustrated. 4. A second prize of £2 for the second-best collection. The collections to be sent to James Richards, Esq., Assistant Secretary, Royal Horticultural Society, on or before the 1st May, 1872, each collection bearing a motto, and a separate sealed envelope with the motto on the outside, and the name of the competitor inside. The Society is to be entitled to take from any of the collections sent in, whether successful or not, whatever specimens or illustrations they may choose, at a price to be fixed by the judges. The judges to have the power to refrain from awarding the prizes should the collections seem not worthy.

EDWARD NEWMAN.

Entomological Notes, Captures, &c.

Sugaring for Moths.—I may supplement your reply to Mr. Butler's query by observing that I have not found it necessary to boil the mixture; in fact, without great caution, by so doing there is a probability of thickening it too much. The darkest foots sugar being used, if this is placed in some vessel previously warmed, boiling water then poured upon it and the compound diligently stirred, a saturated syrup may be easily obtained, which may be bottled, if needful, and kept ready for any occasion. The addition to this of a small portion of rum, at the time it is to be laid upon the trees or palings, gives the needful aroma. Oil of aniseed has been recommended by some: I have tried this, and found it useless by itself. Others recommend essence of almonds, about which I cannot pronounce. So uncertain a thing is sugaring for moths, even in the most likely localities, that the beginner at it must not be surprised if several successive nights turn out to be failures. And what tends to make the matter more provoking is, that the nights you might select as apparently suitable as regards temperature, moisture and so forth, will not prove to be so. Windy weather is, of course, bad; moonlight nights frequently so, but not always. Most success will attend sugaring for moths if it is done continuously. In the years 1865 and 1866 I tried this mode of trapping moths in a garden at Chelsea, on an average about every other night, from May to September. I regret now that I did not tabulate the results at the time, but, from memory, I should say that upon about half the nights there was "no meeting," and the nights when there was a levee did not occur oftener than once a week. It was hardly likely, so near London, that anything very special would turn up, though there were some species which must, I presume, have flown a considerable distance. Geometræ rarely appeared; and hardly a Pyrale, except P. fimbrialis. A notable proof of how London is spreading westward is furnished by the fact that now, after five years only have elapsed, sugaring is of little advantage, only such species as Acronycta Psi, Mamestra Brassicæ and Mania typica generally appearing.—*J. R. S. Clifford; Chelsea.*

Parasitic Acari on Cage Birds.—I find that these attack not only canaries, but also goldfinches and linnets. It was pointed out to me by a bird-fancier, that a frequent source of these is the bird-seed; and upon examination I have several times found them about in rape and hemp, as supplied from the shops; not in canary. To all appearance they devour the seed; if so, it may be assumed, perhaps, that they transfer themselves to the birds rather for the sake of the shelter their plumage affords than for the purpose of attacking them. No doubt there are species which do so; and I am inclined to think that they do migrate from the bird to the human subject, and *vice versâ*, from this circumstance, that when absent from home on one occasion my house was left in charge of a person suffering (as was afterwards discovered) from some cutaneous disorder, and the bird-cages were afterwards discovered to be swarming with Acari, though free from them previously. There is, of course, a possibility that neglect might have been the cause; though this was denied. —*J. R. S. Clifford; Chelsea.*

Early appearance of Anthocharis Cardamines, &c.—On the 7th of April I captured a male specimen of A. Cardamines. This is, according to my experience, a very early date for the appearance of this insect. Another specimen was also captured by a friend of mine on the 13th of this month. As a further proof of the earliness of the season, I may mention that I took a specimen of C. exanthemaria on the 13th, and of F. atomaria on the 14th of this month. I should be glad to ascertain if the season is early in other parts of the country.—*G. H. Raynor; Bordyke House, Tonbridge, April* 15, 1871.

Lepidoptera in Epping Forest.—From the 13th June to the 18th July last, in four days, I took the following species:—Acidalia trigeminata, Crambus pinetellus (common), Rodophœa Marmorella, R. suavella, Dichelia Grotiana, Spilonota Roborana, S. Rosæcolana, Catoptria Juliana, Semasia Janthinana (common), Carpocapsa splendana, Cleodora Cytisella (abundant), Gelechia Mouffetella, Coleophora Fabriciella; also larvæ of N. trepida (13), N. Chaonia (11), E. erosaria (8), A. prodromaria (4).—*William Machin; 21, Argyle Road, Carlton Square, Mile End, March* 9, 1871.

Butterflies near Wotton-under-Edge.—I have taken this last season, on the hills just above Wotton-under-Edge, two males of Polyommatus Corydon and one female, though we are miles from any chalk district; the female being remarkable for the highly dark brown ground-colour of the under side. Also a male of P. Adonis; a female of P. Alexis, measuring 1 $\frac{1}{3}\frac{3}{2}$ inch across the anterior wings. Hipparchia Galathæa, which I never observed in the neighbourhood before, has shown itself in abundance these last two summers. I have taken, too, a specimen of H. Tithonus, female, having two black spots below the ordinary ocellated one on each anterior wing, the upper of the two being also ocellated. I have taken six V. Polychloros this season, here.—*W. E. Thompson; The Ridings, Wotton-under-Edge, January* 3, 1871.

[The variety of Tithonus with two additional black spots below the ocellus on the fore wings is not very uncommon.—*E. Newman.*]

Dasycampa rubiginea at Lyndhurst.—Whilst beating the sallows last night I took a specimen of Rubiginea; and in the last fortnight I have taken a good series of Miniosa.—*James Gerrard; Lyndhurst, April* 6, 1871.

Early Swarm of Bees.—A hive of bees, belonging to Mr. W. Walker of this town, swarmed yesterday: the swarm flew into an adjoining garden, and was hived there. I think this is one of the earliest swarms on record.—*W. Slade; London and County Bank, Buckingham, March* 24, 1871.

Vanessa C-album at Cambridge.—I do not know whether Cambridge has been noted as a locality where this insect has occurred lately, or whether it is commonly taken here. I saw a specimen in a lane near here yesterday, which settled close to my feet; but not having a net with me I failed to secure it. It was rather worn, but the species was easily distinguishable.—*G. H. Raynor; Clare College, Cambridge, March* 26, 1871.

Vanessa Polychloros in abundance.—Vanessa Polychloros has appeared this spring in some abundance in Suffolk. A few days ago I saw a splendid one in Ickworth Park; they are equally fine in my own garden, and on Saturday last (April 8th) I captured two good specimens, and saw several more at Mildenhall. I have carried one larva of A. Rubricata through the winter: it was originally reared on one of the smaller clovers, but now eats nothing but young leaves of Polygonum.—*A. H. Wratislaw; School Hall, Bury St. Edmunds, April* 10, 1871.

Extracts from the Proceedings of the Entomological Society, March 6 *to April* 3, 1871.

Hornet barking an Ash-branch.—Mr. Smith exhibited portions of two small branches of ash, from which the bark had been neatly removed all round. He had received them from the Rev. J. Hellins, of Exeter, accompanied by a note, in which Mr. Hellins stated that, one day last summer, he had observed a hornet busily engaged in removing the bark from these branches. Mr. Smith could not believe that the hornet was providing building-materials for its nest, as he had invariably found this to be composed of friable paper, apparently formed from dead or decayed wood. Upon referring to Réaumur's 'Memoires' he found that that keen observer had recorded a precisely similar circumstance, and he, Mr. Smith, was inclined to think the insect was endeavouring to extract the sap, from the inner wood, as food.

Parasite of the Peacock.—Mr. Dunning exhibited a parasite, which he had recently taken from a peacock. This was evidently the Pediculus Pavonis of Linné and the older authors; but, by all recent writers on these insects, it was termed Goniodes falcicornis of Nitzsch, who, in Germar's 'Zeitschrift,' actually gave Linné's name as a synonym, for what reason he knew not.

Malformation in the Antennæ of Lepidoptera.—Mr. Lewis exhibited examples of antennal malformation in Lepidoptera, comprising (1) a specimen of Melitæa Cinxia, in which the apical half of one antenna was aborted; (2) Cymatophora diluta, with one antenna congenitally wanting; and (3) Scopelosoma satellitia in the same condition, and, in this specimen, the corresponding eye was enveloped in a cuticle. He also exhibited Melitæa Cinxia, with malformed hind wings.

Galls of Campanula rotundifolia.—Mr. Müller communicated the following notes on a Cecidomyia, causing galls upon Campanula rotundifolia:—"Mr. James W. H. Traill, of Old Aberdeen, has sent to me several specimens of Campanula rotundifolia, gathered by him in August last on exposed braes, two or three miles to the north of that city, which specimens are infested by the larvæ of a Cecidomyia. They occur both in the seed-vessels, and in green, small, globular, monothalamous axillary galls, developed from buds. On some shoots almost every bud is appropriated by the gall, and one specimen presents a terminal cluster of them. Mr. Traill has suggested to me that the galls are, probably, abortive flower-buds, and I am inclined to concur in his opinion, owing to the presence of the larvæ in the seed capsules as well. One of the latter disclosed an immense number of unripe seeds, each one tenanted by the very young oval larva, the smallest quite white; older ones, of a flattened form, have the centre of the body longitudinally purple-red, and the remaining parts almost transparent. At this stage the larvæ looked very pretty in the seeds, of which they had consumed the contents, presenting the appearance of living rubies, cased in flat capsules of transparent horn. The adult larvæ had fourteen segments; they were elongate and of a reddish colour, with darker intestines; the first segment very slender and beak-like. In the full grown state they were lively; but in the earlier stages they appeared rather sluggish. I regret that mildew killed the whole brood. I propose for this species the name of C. Campanulæ, as its peculiar mode of life warrants my considering it a new species."

British Species of Oxypoda.—Dr. Sharp communicated "Notes on some British species of Oxypoda." After remarking upon the extreme state of confusion that existed respecting the species of this genus, Dr. Sharp proceeded to critical notes upon most of the previously recorded British species, and described four as probably new to science, *viz.* O petita, hitherto confused with O. cunicularia, generally distributed in England and Scotland; O. edinensis, from near Edinburgh; O. verecunda, from near London and in the fens; and O. tarda, from salt-marshes near Dumfries.

Immature sexuality, &c., of Insects.—Mr. Lowne read, "Observations on immature sexuality and alternate generations in insects." The author thought that species originated occasionally from the maturation of the sexual organs before acquiring the adult characters. He had been induced to believe that such is the case, from the early period at which the sexual organs first make their appearance in the embryo and larva, from the fact that some larvæ have been taken *in copulâ*, and from an analogous phenomenon which had been observed among the Echinodermata. In the course of the paper he had occasion to enter largely into details of correlation of development between the cutaneous and sexual organs in insects. He stated his belief that such correlations often gave rise to secondary sexual characters. The paper concluded with a comparison between acquired and direct larval forms. The author thought the larva and pupa of insects were probably all acquired, and not direct, stages of development. With reference to Mr. Lowne's remarks on the early development of the sexual organs in insects, and with a view of disproving a not uncommon idea that the sex is determined by the supply of food (or its quality) furnished to the larva, Mr. Briggs detailed some experiments he had made. A number of larvæ of Liparis dispar were separated into two divisions, about sixty in each. One lot were fed upon hawthorn, the other upon elm. In the elm-fed larvæ the imagos produced were about equal as to sex, but there were only two perfect females; the males of the ordinary size. In those fed upon whitethorn, the sexes were again about equal in number, but the males were much smaller and paler, whereas the females were much finer, and scarcely any of them imperfect. Again, with a view of determining whether any truth exists in the statements of old authors that larvæ differ in colour according to sex, Mr. Briggs experimented upon two forms of the larva of Trichiura Cratægi; one form being ringed, somewhat like the larva of Bombyx Rubi; the other mottled. These forms were figured by Hübner as of different sexes; but the first-named seemed to be dying out, and was described by none of the more recent writers. From a batch of eggs Mr. Briggs obtained about thirty larvæ of each form: firstly, a male imago, produced from a larva of the ringed form, was paired with a female of the mottled form; secondly, these conditions were reversed; thirdly and fourthly, each form was paired with its like. From these four experiments in no one instance was the ringed form of larva obtained; and it did not reappear after breeding in to the third generation.

Swarms of Chlorops lineata.—Mr. Dunning read the following letter received from the Rev. L. Jenyns, of Belmont, Bath:—"I see in the Proceedings of the Entomological Society (Part v. 1870, p. xxxiv.) notice of a communication, made at the Meeting of the 7th November, respecting large swarms of flies, referred to Chlorops lineata, which had appeared in September in a room in the Provost's Lodge at King's College, Cambridge. It may be worth drawing the attention of the Society to the circumstance of the same phenomenon having occurred, probably in the same room, in 1831, thirty-nine years ago, where it was witnessed by myself, the late Provost, Dr. Thackeray, having invited me to come in and see it. Of that phenomenon I published a full account at the time in Loudon's 'Magazine of Natural History' (vol. v. p. 302), and it was afterwards reprinted in my 'Observations in Natural History' (p. 275), published in 1846. In reference to the occurrence of this fly in King's College Lodge in September last, Prof. Westwood 'thought it was with a view to hybernation.' This in itself seems not improbable; but the remarkable thing is, in this case, that the same house, if not the same room, should have been selected by this species of insect for the above purpose over a period of nearly forty years, during which time there must have been a succession of many generations. On the occasion of the swarms in 1831, it was about the 17th of September, so far as could be remembered, that these insects first showed themselves; and it was thought that they had entered the room very early in the morning, by a window looking due north, which had been open during part of the night, having been first observed between 8 and 9 A.M."

Pollen-mass of an Orchid on the Eye of a Dipteron.—Mr. Verrall exhibited a dipterous insect, Pipiza noctiluca, taken by himself at Rannoch, to the head of which was adhering a foreign substance, apparently a fungoid growth. Several members dissented from this explanation of the nature of the substance in question, and thought it was probably the pollen-mass of an orchid.

Gall on the leaves of a Carex.—Mr. Müller exhibited a gall on a species of a Carex, concerning which he read the following notes:—"The present Lord Walsingham kindly sent to me, in the middle of September last, a growing plant of an undetermined species of Carex, collected near Thetford, in Norfolk, pointing out to me at the same time some curious galls on its leaves. They may be described as oblong, of the size of a grain of wheat, and as attached longitudinally to the blades of the Carex, sometimes in groups. When fresh they were of a paler green than the plant itself; in their present dry state they are coffee-brown, and remind one vividly, by size and colour, of the brown cocoons of certain Nemati. But this resemblance is only superficial; they form part and parcel of the plant, and derive, in their fresh state, their sap direct from its tissues. They are monothalamous. I potted the plant immediately on arrival, but, notwithstanding my constant attention, I have failed to rear the maker of these excrescences, so I record my observations so far, in the hope that other naturalists will be luckier than myself."

Gynandromorphism in Hymenoptera.—Mr. Smith exhibited examples of gynandromorphism in Aculeate Hymenoptera, and read the following notes:—"1. In 1836 I took Anthophora Acervorum, in the month of April, at Barnes, Surrey. In this example the male characters are very conspicuous, and are all situated on the left side, most conspicuously so in the head, thorax and legs. This specimen is figured in the 'Zoologist,' vol. iii., and also in my book on British Bees. 2. A second example of Anthophora Acervorum is in the collection of the late Mr. Walcott, of Bristol; but the sexual peculiarities of structure are much less apparent than in that exhibited. 3. Andrena thoracica. In this specimen the male characters are on the right side, and are observable in the antennæ, head and legs. 4. Nomada baccata. In this specimen the male characters are found to be on the left side; the head is about equally divided sexually; the antennæ having in the male sex the front side white, and also a white line at the inner margin of the eye, and the face covered with silvery hair; the male mandible is longer and pointed at the tip; in the female it is blunt. The thorax is coloured as in the female. The abdomen exhibits a strange peculiarity; the apical segment above is blunt, as in all the females of the genus, whilst beneath it is acute; there are the usual six segments above, beneath there are seven. Taken at Weybridge in 1845. 5. Apis mellifica. A monstrosity, partly male, partly worker. Antennæ worker on both sides; eyes worker; left anterior leg male; the right intermediate leg and also the posterior one male; the abdomen has the silky gloss of a male, and is in form partly so, being more blunt at the apex: the male organ of generation is partly protruded. This specimen was sent to me by Mr. Woodbury, of Exeter."

Lepisma saccharina.—Mr. W. A. Lewis called attention to the ravages reputed to be occasioned to books by Lepisma saccharina, with reference to Mr. Quaritch's statement made before the Society at the Meeting held on the 3rd of January, 1870. Although it was acknowledged that Lepisma damaged books by eating the paste of the bindings, thus causing them to fall to pieces, yet it had been considered impossible for it to bore holes in the books, as stated by Mr. Quaritch, such ravages being considered due to Anobium. However, upon referring to Dr. Packard's 'Guide to the Study of Insects,' Mr. Lewis found that the author (p. 623) endorsed the opinion that Lepisma is a borer. Mr. Horne alluded to the damage done to silk garments in India by Lepisma; the insect evidently attacking the silks on account of the stiffening matters in them, but, nevertheless, making holes in the fabric.

Grouping of British Macro-Lepidoptera.—Mr. W. A. Lewis read a paper on the order of the groups of the Macro-Lepidoptera. He criticised and condemned the arrangement introduced by Mr. Doubleday's List of 1859, and accompanied the statement of his views with a variety of comments on the modern works dealing with his subject, particularly Dr. Knaggs' 'Cabinet List of Lepidoptera' and Mr. Newman's 'Natural History of British Moths.' The paper first stated the order of arrangement by different authors from Linnæus to the present day, the conclusion arrived at being that the Linnean order was followed almost without deviation by every author down to the year 1859; also that the Linnean names of the different groups were adopted very generally until the same date. Mr. Lewis remarked that since 1859 we, in England, had been subjected to the discomfort of having two rival systems of arrangement, the followers of neither of which take the smallest recognition of the other. He noticed severally the groups of Doubleday's List, and stated, successively, reasons against the acceptance of the names Diurni, Nocturni, Drepanulæ and Pseudo-Bombyces; contending, in effect, that, in the case of the two first-named groups, the new names were, from their history, inapplicable; and as to the others, that both divisions had prior names. He also objected to the name "Pseudo-Bombyces," on the further ground that the scheme of classification, of which that group forms part, does not acknowledge a group "Bombyces," and therefore a group "Pseudo-Bombyces," in the same scheme, is a solecism. Mr. Lewis expressed his belief that the existence of the group Pseudo-Bombyces was entirely owing to the necessity, in M. Guenée's view, of maintaining the order of the Noctuæ which he, and other authors, had observed. To do this it was necessary to place them in the old position next after some Bombyciform genera, as the group had been arranged to "face towards" Bombyx. Mr. Lewis contended that the course followed was empirical, and was, besides, a failure, because the order of the Noctuæ still led one to expect the Geometræ at the end of the group. He contended, also, that the division of Bombyx had become a necessity when M. Guenée determined to place Geometra next to Bombyx without re-arranging Noctua, and that the *part* of Bombyx separated was then never in doubt, since Platypteryx (as everyone had remarked since Linnæus) would easily join the Geometræ and Ceruræ. He showed that M. Guenée had (in 1852) admitted that in order to give effect to the affinity of Geometra to Bombyx, it would be necessary to re-arrange Noctua, and in his plan, then proposed, made no suggestion that it would be necessary to divide Bombyx. Mr. Lewis also gave a variety of reasons against the new order. He also mentioned that some of the species now grouped as "Pseudo"-Bombyces had, by Latreille, been denominated "Bombycites Legitimæ," and some by Hübner "Bombyces veræ"; that the twenty-seven species now separated from the Bombyces by the whole of the Geometræ were, by Westwood and other writers, considered so closely akin to the "true" Bombyces that they were included *in the family* Arctiidæ; and that the Linnean order, from which the order of 1859 showed so great a departure, had received illustrations of its propriety in the nomenclature adopted by Denis and Schiffermuller, by Hübner, Horsfield, Boisduval, and many others, *viz.* Noctuo-Bombycidæ, &c., Semi-Geometræ, &c., Semi-Noctuales, &c. Mr. Lewis then expressed his opinion that, considering the concord among first-rate entomologists in favour of the Linnean order, the introduction of the new arrangement "*sub silentio* in a mere labelling list" was "an affront to Science." Considering recent publications, Mr. Lewis showed that Dr. Knaggs (in his 'Cabinet List of Lepidoptera') had failed to observe, in a number of instances, his own canon requiring preference of the female name when two names are simultaneously given to the two sexes of a species, instancing, besides others, the names "Janira," "Arcuosa," which should have been "Jurtina," *Linn.*, "Minima," *Haw.* He also complained that this publication, like Mr. Doubleday's Lists, assumed, though published with an object altogether different, to introduce changes in arrangement. With reference to Dr. Knaggs' proposal to place Pterophorus after Pyralis, he remarked that "if such a change was to be so brought about it was a waste of time ever to write a book." Remarking on a passage in Mr. Newman's 'Natural History of British Moths,' as to Mr. Doubleday having "approved" certain changes, Mr. Lewis declared that what entomologists want is not that changes should come to them "stamped with the approval of this or that leading man, but that an author, who proposes any change in nomenclature or arrangement, would first state all his reasons, and then leave the approval to *them*." Mr. Lewis strenuously protested against any changes in arrangement being introduced in a mere list of synonyms, and quoted M. Guenée as satirizing the practice. As to changes in names, he suggested that the legal maxim "Communis error facit jus" might with advantage be applied in cases of long-forgotten specific names, as he felt assured it would, in effect, be, in the case of the misapplied generic names detailed by Mr. Crotch in the Ent. Soc. Trans. for 1870; and he also condemned the insufficiency of the information given by all the English lists, showing that none of the lists stated the reason for a change of name, or whether the discarded name was supplanted by a prior one, or found to refer to a different species. With reference to Mr. Lewis's criticisms on recent changes in the arrangement of British Lepidoptera, Mr. Briggs remarked that Mr. Newman, in his 'Natural History of British Moths,' had united Tapinostola Bondii and Miana arcuosa into a genus termed Chortodes, giving no reason for this change excepting Mr. Doubleday's "approval." Mr. Briggs had examined the palpi of these two species, and found they were very dissimilar; he considered, therefore, that this union of the two into a special genus was unnatural.

[I have unfortunately misled both Mr. Lewis and Mr. Briggs in not having repeated in the body of the work the information so clearly given in the advertisement, and certainly known to every British lepidopterist, that the arrangement and names in my 'British Moths' are taken from Mr. Doubleday's List. When, therefore, it appeared desirable to deviate slightly from this announcement, it became also desirable to consult Mr. Doubleday on the subject, to obtain his approbation to the changes, and to state explicitly that I had done so.—*Edward Newman.*]

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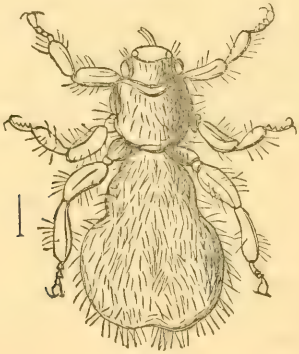
Answers to Correspondents.

Enclosure of Epping Forest.—My readers will recollect the struggle in which I embarked three years ago to prevent the enclosure of Epping Forest, a struggle in which my brother members of the Haggerstone Entomological Society took a most noble and patriotic part, assisting with funds and counsel, and with all the interest they could bring to bear on this great and national question. Feeble, indeed, are the efforts of that class to which we, of the Haggerstone, belong: we neither possess the funds nor the influence that can rescue public property from the grasp of the wealthy; but, in this instance, some of that very class have taken a part in the proceedings; and a remnant of that lovely forest is for a while rescued from the hand of the spoiler. The entire question is one of money; and we must not yet consider our property safe. It may remain with us for a time; but zeal for the good cause may, ere long, cool, while the rapacity of the aggressor knows no rest. Our great enemy is the very law that should be our greatest friend, and that fearful engine must be fed by money, and we, alas! have no means of satisfying its voracious appetite. Still, let us be thankful for the apparent victory we have gained, and enjoy the results of that victory, of right over might, before it is turned into a defeat. The following extract is from the 'Daily News' of the 29th of April:—"The House of Commons has once more resolved that Epping Forest shall be rescued from the incursions of the surrounding landlords, and preserved for the recreation and enjoyment of the people. A popular Parliament has in this renewed vote justified its popular origin and proved its popular sympathy. The only matter of regret in last night's vote is, that the Government did not profit by the experience of last year, and consent to Mr. Cowper-Temple's motion. It was quite evident from the whole tone of the debate that the division would go against them. They had, in fact, hardly any case. When Mr. Cowper-Temple had told over again the story which Mr. Fawcett told the House last year, Mr. Lowe could only stand up and offer to go on with the Bill which was practically rejected by public opinion, though by accident it escaped condemnation by the House. Mr. Gladstone himself was not more fortunate. Though he threw himself on the indulgence of the House, and spoke twice, he failed to show reason against the motion. Even the promise that the Government would do what it could was ineffectual against the impatience of the majority. They are as anxious as the House of Commons to preserve the Forest, but do not wish for the responsibility or the trouble of its preservation. The House has once more imposed on the Government the duty of preserving the Forest, by a majority of 197 against 96. There are about 3500 acres of Forest still remaining out of the 7000 acres on which all former generations of Londoners have wandered at will. The Bill in question gave up 2500 acres to the landlords, and kept 1000 acres for the public. This 1000 acres was, however, to be subject to the value of the rights of the commoners over the whole area, and it was reckoned that about 400 acres must be sold to pay the commoners for their rights. Out of the 7000 acres of which the Forest originally consisted, 600 would, therefore, have been reserved for the public, and all the rest would have gone, as 3500 acres have already gone, into private hands. The difficulty is that neither the rights of the Lords of the Manors, nor those of the Commoners, nor those of the Crown, are at all clearly defined. One thing, however, is obvious. Whatever the rights of the Crown are, they have kept open those 7000 acres of land during the whole course of English history down to our own day. Neither the greedy barons of the Middle Ages, nor the mercenary courtiers of later times, ever filched the land from the enjoyment of the people. As lately as 1854 seven thousand acres remained, and were still dedicated, as they were at first, to the public recreation. About that time some Commissioner of Woods and Forests conceived the splendid idea of turning the Crown rights into cash. The neighbouring landlords were very willing to buy, and the rights over about 4000 acres were sold. They produced the miserable sum of £18,503 16*s.* 3*d.* For this small sum those magnificent lands were transferred to the complete private possession of the Lords of the Manor, and all right of the public to go upon them ceased. Mr. Gladstone assumed that Mr. Cowper-Temple's motion would call for the expenditure of public money. But Mr. Vernon Harcourt pledged his knowledge, as a lawyer, to the statement that no money need be spent, and that if all the forestal rights of the Crown—rights described by Mr. Cowper-Temple as those of hunting, shooting and recreation—are asserted and maintained, the whole 3500 acres must be kept open. The real difficulty is, that the Lords of the Manor have learned to defy the Crown. Even now the trees at High Beech stand marked for the woodman's axe; and nobody seems to have power to command the woodman to spare those trees. All round the still remaining open space petty enclosures are going on; and those who are responsible for the rights of the Crown do nothing to stop the encroachments. Mr. Lushington, accompanying a deputation to the Chancellor of the Exchequer two years ago, said that if an action was taken to force the Lord of a Manor, who had made some encroachments, to disgorge the land, it would cost some £1500, and would probably succeed. If it did succeed, all who have made encroachments would at once have to resign them, and the Forest would be saved for the recreation of the Crown and of those whom the Crown represents. Why cannot this simple method of protecting the land be tried? Mr. Beresford Hope reminded the House that hitherto nearly all that had been done in saving open spaces had benefited the population of the wealthy and open districts in the North and West. Wimbledon and Wandsworth Commons and Hampstead Heath are even now being set aside to popular recreation and enjoyment for ever, but all belong to the West and North. Epping Forest is the holiday haunt of the working population of the East. For generations the poor of London have spent their holidays among its trees and underwood and on its open glades. Surely the Crown cannot better do its duty to these vast populations than by throwing the shield of its unquestionable rights over the Forest. The House of Commons has earned their gratitude by once more resolving that the Forest shall be kept for the people; the Crown will share that gratitude, if it is shown that its rights are to be exercised for the people's benefit."

When I am gone to that place from whence there is no return; when this little effort is defeated by the hand of the aggressor; I trust some future entomologist may engrave on my tombstone:—"He *tried* to save the People's Forest for the people." I desire no better epitaph.

Insects infesting the Sheep.—1. *The fag or tick.*—The note in the May number has elicited several highly interesting communications, showing that there is great anxiety on the part of farmers and others to obtain more correct information. The fag or sheep-tick, of which I give a figure copied from Walker's 'Insecta Britannica,' vol. ii. pl. xx. fig. 6, is the most familiar. It belongs to that strange and aberrant group of Dipterous insects, which are distinguished from all others by their peculiar metamorphosis, which has been thus described:—"The species of this family pass their egg and larva state in the body of the mother, and when born are pupæ, or larvæ just ready to assume the pupa state, as is proved by their size, which nearly equals that of the parent fly; by their slight motion when first extruded; by spiraculiform points which run down each side of them; and by their changing into perfect flies. Each female produces only a single egg or ovipupa." This rather disgusting-looking creature lives entirely in the wool, among the fibres of which



it crawls with great facility by means of its long, curved, bifid claws: the ovipupa is deposited at the roots of the wool close to the skin.

2. *Mr. Cordeaux writes as follows on this Pest*:—"The fags are common alike to all our breeds of domestic sheep, and their prevalence in some districts during the present season I attribute, in a great measure, to the scarcity of keep during the past year. When sheep are shrinking, or ill fed, and 'doing badly,' these pests increase. They are, when numerous, extremely prejudicial to the welfare and improvement of the animal they infest; constantly irritating and causing the sheep to rub themselves, and to pull out the wool with their mouths ('pluck themselves,' as our shepherds call it): in fact, they keep the sheep in a perpetual worry, preventing rest, and, consequently, altogether stopping or greatly retarding the fattening or well-doing of the animal. No flock is without them: that they should, however, exist in numbers injurious to the sheep is *undoubtedly* the fault of the careless farmer or flock-master; as with proper attention they are easily kept within bounds. My own plan is, as soon as possible after clip time (by which process the elder sheep are pretty well cleared of these vermin), to dip the lambs in some of the various compositions used for this purpose; and in November to salve the whole flock with mercurial ointment, which is rubbed at intervals in streaks along the skin without smearing the wool. This process not only gradually destroys the fags, but also greatly improves the growth of the fleece and the health of the animal. In a badly-fed and neglected flock the fags increase rapidly."—*John Cordeaux; Great Cotes, Ulceby, Lincolnshire, April* 12, 1871.

3. *The Bot or Nose-fly of the Sheep.*—The life-history of this fly is well known: its eggs are laid on the inner margin of the sheep's nostril, from a single one to seven or eight in each sheep, and these, on becoming larvæ, enter the frontal and maxillary sinuses, and, it is said, even the horns; but of this I am unable to speak from my own observation. I have found many in the frontal sinuses, having obtained the heads from a butcher: they appear to me to feed on the pus caused by the irritation, but, perhaps, also on the healthy secretions. When the larvæ are young they are perfectly white and transparent, except two small, black, horny plates: as they

increase in size the upper surface becomes marked with two brown lines on each segment, the anterior being shorter and narrower than the posterior; and some spots are also observable on the sides: they consist, as usual, of twelve segments besides the head. When placed on a rough surface these larvæ crawl with considerable activity, first fixing themselves by two jaw-like hooks, with which the head is furnished, and thus drawing up the body, which is quite without legs. When full grown they fall through the nostrils of the sheep and change to pupæ on the ground among the herbage, and, not unfrequently, attached to a blade of grass: in two months the pupa-case splits open and the perfect fly comes out. Sheep are exceedingly annoyed by these flies, and to escape them will often be seen lying down in cart-ruts with their heads close to the ground; at other times we see them huddled together in a dense crowd under a tree, each having its head turned towards the trunk of the tree and its nose pushed into the wool of the one standing before it. It is a very general opinion that the operations of this insect, being carried on so near the brain, cause that *vertigo*, or giddiness, so well known as a serious and most fatal disease; but my friend Mr. Reeks, who has had great experience, doubts this conclusion, and gives the following reasons for his incredulity:—"(1) Young sheep go 'giddy' at all seasons of the year until they are about eighteen months old, but mostly so in the dead of winter, no matter how severe and frosty the weather may be. (2) A giddy sheep *never* recovers; but would most assuredly die if not killed. (3) Giddiness is transmitted through several generations by sheep in the same flock, which have not, however, been affected. (4) Giddiness will invariably arise from continued interbreeding, and is very similar to the imbecility in the human species by continued intermarrying. I will give you a case in point:—Supposing a farmer has four hundred ewes, which have bred lambs this year from lambs (rams), which were their own offspring last year: this will not cause giddiness; but if they (the rams) are used next year with their sisters, so to speak, it is almost a certainty that, perhaps, ten per cent. of the offspring of these young ewes will go giddy; and if the process of interbreeding be continued for another year, or so, it will take several generations to get giddiness out of the flock, and the per centage of deaths will be much greater the longer it is continued. To illustrate my meaning in another way: —Supposing a farmer equally divides a flock of four hundred ewes, and continues to interbreed with two hundred, while for the other two hundred he goes to some ram-breeder who, he knows, is continually importing fresh blood into his flock, the result will be that, although both flocks are kept side by side in the *same field*, the young of the former *only* will go giddy; and if, by chance, *one* should go giddy from the latter flock it would point to some indiscretion in breeding in a former generation. Now, if in such very plain and straightforward cases as quoted above the mischief is caused by a 'fly,' how does the insect discriminate between the two flocks? There may be two kinds of giddiness; but the above is the only form with which I am acquainted."—*Henry Reeks.*

4. *Flesh-flies or blow-flies.* — Mr. Reeks, in answer to an inquiry of mine, says:—"These flies deposit their eggs or living larvæ in the wool of sheep, generally about the root of the tail or behind the shoulders, anywhere, in fact, where the wool is most greasy. The larvæ of these flies are most troublesome to shepherds in the latter part of May and June, until the sheep are sheared, and much later in the summer with lambs, unless they are dipped in a preparation of arsenic and soft-soap."—*Henry Reeks; North End, East Woodhay, Newbury.*

Having for many years been acquainted with the mischief done by these flies, often causing death to the sheep and great loss to the farmer, I am most anxious to learn, entomologically, to what species they really belong; and I shall be truly grateful for any information tending to clear up this very obscure point. The larvæ or maggots cannot, I am aware, be obtained without considerable trouble; nor can the flies be reared from them without care and perseverance; yet as the subject is one of such great importance to the sheep-owner, I trust I shall receive the help required.

Haltica fuscicornis an enemy of seedling Saintfoin and other Leguminosæ.—Mr. Reeks has sent me more than fifty specimens of a small beetle, which is now doing incalculable injury to the young plants of saintfoin, &c. Directly these seedlings make their appearance above ground the beetles seem to be ready on the spot to fasten on the seed-leaves, and thus devour the plants before they have any time to acquire size and strength to resist the attack. It is probable that much rain in the spring would greatly retard the progress of the beetle; but, then, no farmer desires a wet spring. I have not, of course, worked out the life-history of this little pest, as I have done that of its congener the turnip-fly or turnip-flea; but I do not doubt the larvæ will be found abundantly on the older plants in June; but as yet it is unknown. In the meantime I will invite attention to this little beetle by describing its colours:—The antennæ are dull-red, slightly darker towards the extremity; the head is red, and the eyes black; the thorax is exactly of the same red colour as the head, and so are the legs; but the body is nearly black, and the wing-cases are dark metallic-green and brilliantly polished. This beetle is the Chrysomela fuscicornis of Linneus, described at p. 595 of the second volume of the 'Systema Naturæ' (thirteenth edition), and the Haltica fuscicornis of Stephens. The Linnean name of fuscicornis must be adopted, although the beetle has become better known under De Geer's name of rufipes, which has been adopted by Panzer on the Continent, and by Marshall, Donovan and Samouelle in this country.

Labia minor flying.—1. At five o'clock this afternoon I noticed something which may interest you. Whilst I was in our small garden I saw, what I imagined to be, a Tinea fly up from a lavender bush and raise itself about three feet in the air. I immediately stepped after it: it continued its flight at about the same height for about twelve or fifteen feet, when I knocked it down with my open hand into the path, and I was surprised to find it not a moth at all, but what I take to be an earwig. I send you the specimen to examine, and say whether I am right. 2. I should be glad if you would give me the title of any *good* work on Diptera and Hymenoptera. —*Frederick Enock; 48, Tollington Road, Holloway, May* 5, 1871.

[1. The little insect is Labia minor: it is well known as a *flying* insect; it is allied to the common earwig, but is not identical. 2. Walker's 'Insecta Britannica, Diptera,' in three volumes, with descriptions of the species and figures of the genera, is the only work with which I am acquainted on British Diptera; the price is 18*s.* per volume. On British Hymenoptera we have several excellent works: (1) Shuckard's 'Fossorial Hymenoptera,' 1 vol., with descriptions of all the species and outline-figures of the wings of the genera, price 14*s.*; (2) Smith's 'Catalogue of the British Bees,' with descriptions of the species and outline figures of the genera, price 6*s.*; (3) Smith's 'Catalogue of the British Fossorial Hymenoptera,' with descriptions of the species and outline-figures of the wings, price 6*s.*

Nyssia lapponaria in Scotland.—In the notice of the obliging but hurried communication made by Mr. Bond on the capture of this insect there are two mistakes, neither of great importance, but both requiring correction. Mr. Roper-Curzon, who is the owner of the insect, is not a clergyman, but a barrister; and Mr. Meek, not Mr. Curzon, employed Warrington as a collector. Mr. Meek has obligingly shown me the specimen, which is a very beautiful one. The species is figured, in the 'Annals of the Entomological Society of France,' as the Biston lapponaria of Boisduval; and there is an excellent figure of it (440) in Herrich-Schæffer, but this differs from Mr. Roper-Curzon's specimen in having a distinct crimson medio-dorsal stripe on the thorax, which is scarcely perceptible in the Scotch specimen; and the Scotch specimen has a distinct yellow costa, which character is scarcely perceptible in Herrich-Schæffer's figure. It has been suggested that the Lapponaria of Boisduval is a variety of Pomonaria of Esper, also figured by Herrich-Schæffer (439); but I think, without sufficient reason: Herrich-Schæffer places both in the genus Amphidasys (p. 100).

Timarcha tenebricosa.—The plump metallic-green larva which A. S. F. enclosed is the larva of a beetle, Timarcha tenebricosa: it will feed freely on a plant called clivers or cleavers (*Galium aparine*), found in every hedge, and remarkable for the tenacity with which it clings to everything it touches; this plant and Rubia peregrina climb by a process very rare among plants, the contact of minute hooks scattered over the surface of the leaves and stalks. The beetle in all its stages confines itself to hedge-weeds; and, although the specimen was found in a garden, you may rely on receiving no material injury from its depredations.

Tipula oleracea.—The offensive-looking grubs, sent by a "Sussex farmer," are the larvæ of the common daddy-long-legs (Tipula oleracea): they are described as eating the young blade of oats just below the surface of the ground. The remedy will be found in doing all you possibly can to encourage partridges, rooks, starlings and sparrows. I know of no artificial remedy so good as this natural one; but lime water and water in which walnut-leaves have been boiled effect the same object when these can be applied, as on small lawns or grass-plots: it is almost impossible to employ these remedies on a large scale.

Shower of Insects at Bath.—Can you, or any of your correspondents, account for the following apparently mysterious occurrence:—On Saturday, April 22nd, during a shower of rain myriads of small glutinous globules, corresponding to the one I forwarded to you, fell on the platform of the Midland Railway Station here: lying on the platform they resembled half-melted hailstones; where it was dry they seemed to disappear altogether, only leaving behind a grease-like spot about the size of a pea. They first appeared between 5 and 6 A.M., and by 11 A.M. worms of about half an inch in length issued *singly* from the globules; but from only a comparatively small number of them. A few of the remaining globules were then gathered up on a piece of paper and kept in water; a sample of these I have forwarded for your inspection (the *small* insects having appeared in the water after two days had elapsed). On Sunday, April 23rd, another downfall occurred, nearly in the same place and under precisely similar circumstances. A local naturalist has accounted for the phenomenon in this way:—He believes the insects to have been the larvæ of the gnat, cast up from the river in a *water-spout* and borne away by the wind; but, as there was nothing of a hurricane at the time, and no one observed anything extraordinary, this would seem improbable. What are they; and how came they to be up in the air? In order to prevent misapprehension it may be as well to state that although I did not actually witness this extraordinary occurrence, I saw the insects in very large quantities, just as they had been gathered together, a few days after; and that the information given above is from numerous and most reliable authorities, some of whom actually witnessed the phenomenon.—*Charles Herbert Bree;* 15, *Great Stanhope Street, Bath, May* 12, 1871.

The mass kindly transmitted to me by Mr. Bree was exactly two-fifths of an inch in its longest diameter and very little less in its shortest: its shape may be described an obtuse-oblong; its surface was uneven, and its substance gelatinous and sufficiently transparent for me to observe that it contained several small vermiform animals. Having taken the mass out of the water, and partially dried it on blotting-paper, I found in the interior eleven vermiform larvæ, each of them rather less than a fifth of an inch in length, and each encased in what appeared a tube of the most delicate character and composed of the finest silk: this was rather to be inferred from its tenacity than from any observation I was able to make, as I could not detect anything like threads: the head of these larvæ had two ocelli or rather dark spots, which appeared to be so, and the next segment or prothorax had two curved or sickle-shaped legs; the last segment was furnished with six small lobe-like appendages, and the penultimate and antepenultimate segments had each a pair of long thread-like legs. I must, however, use the term "legs" with caution, as I have really no knowledge of their function. These little creatures seemed firm, leathery and colourless, with the exception of a mediodorsal stripe of a decided red colour, which passed from one extremity to the other, and tinged the whole body with pink. I believe these to be of the same genus, and probably species, as those which are often so abundant at the bottom of stagnant ditches and ponds, communicating a red tint to the surface of the mud. Réaumur, in his memoir in vol. iv., has described a larva that I believe to be the same; and it is figured in pl. 4, figs. 11 and 12, and in vol. v. pl. 5 as producing the little gnat now known as Chironomus plumosus; and although I cannot, of course, say, of a minute larva now observed by me for the first time, that it is that of the Chironomus in question, still I feel very confident it is either that or a nearly allied species. The gelatinous mass and its contained tubular cases are connected with, if not produced by, the same insect. I attempt no explanation of the circumstances under which it is said to have been found. Gentlemen to whom I am indebted for newspaper-cuttings and written accounts of this phenomenon will please accept this as the only explanation I am able to give.

Name of Insect.—Can you kindly name the enclosed? They were found at Cairo running very quickly on the sand about a foot at a time, stopping very suddenly and resting pressed closely to the sand, being very difficult to see when in that position, owing to their similarity in colour to the sand. One, as you will see, was brought home dry; the other in carbolic acid; the latter is much swollen.—*H. Jenner-Fust; Hill Court, Berkeley, May* 11, 1871.

The generic name of the insect is Eremiaphila, but I am uncertain of the species: they are figured in the great French work on Egypt, pl. 2, figs. 5, 6 and 6a. A very full description of these strange desert insects is given by Lefebvre in the French annals; and the paper (one of the most interesting entomological memoirs I have ever read) is admirably translated at p. 66 of vol. iv. of the 'Entomological Magazine,' published in July, 1836. I intend transferring a portion of this paper to the 'Entomologist,' whenever space can be afforded.

Otiorhynchus sulcatus and Peach Trees.—The insects, described as so injurious to peach trees in orchard-houses, are weevils of the genus Otiorhynchus and species sulcatus: they feed almost exclusively by night, gnawing off the bark from the tender shoots and, of course, killing them. I have known them to be got rid of by hand-picking with candle and lantern; but I know of no application that will have the same effect.

Eriogaster lanestris.—The downy mass of eggs sent by Mr. Horley, of Hoddesdon, is deposited by the female of the small Eggar moth (Eriogaster lanestris); the eggs are arranged in a somewhat spiral whorl, which passes obliquely round and round the hawthorn twig, and is covered by long, soft, silky hairs or scales from the body of the parent: the male has no such provision. The young larvæ live for a while in company under a tent or web spun by their united exertions, devouring the leaves which they thus enclose; but after a time feed singly and exposed.

Variety of Arctia Mendica.—I obtained last May a moth which, at first sight, I supposed was Arctia Urticæ, but, on closer examination, appeared to be only a variety of

A. Mendica, having only two spots on the fore wing and none on the hind wings. I obtained eggs from it, and they duly hatched: I fed them on chickweed; they lay over the winter in the pupa, and have just emerged, ten or twelve of them; and they are all coloured in the same manner as the parent. The males are a smoky black, but have only the two spots. If this is a variety, is it usual for it to be continued in the offspring?—*W. H. Hamilton;* 13, *Union Street, Newcastle-on-Tyne, May* 6, 1871.

I can scarcely answer this question; the transmission of varietal colouring to descendants is very imperfectly understood at present.

Butterflies in Carmarthenshire.—As I see in your 'British Butterflies' you are giving a list of localities, you may care to know that in this neighbourhood (two miles from Carmarthen), though only a beginner, I find marble whites and orange tips in great abundance; Edusa, plentiful; high brown fritillary, grayling and brimstone, scarce. A collector for five years has not taken one brimstone; I have seen two and taken one.—*Owen S. Wilson; Cwmffrwd, Carmarthen, May* 7, 1871.

I am obliged for this and many other communications of similar import from different parts of the country, but am quite unable to understand why such information was withheld until the completion of the work had precluded the possibility of making it useful.

Bees deluded by the Colour of Spiders.—I was walking this afternoon beside the Blackwater, a small stream which flows through our valley, when I observed a common hive bee hanging, as I supposed, by the abdomen, from the blossom of a yellow cress, which is abundant there, Barbarea vulgaris. Accordingly, I picked the blossom and examined it more closely, as the position of the bee was peculiar, and I did not think it was dead. As it did not move, I at first thought it must have been detained a prisoner by some viscid fluid peculiar to the plant. I found, however, that in reality it was being tightly held by the falces of a bright yellow spider, so exactly the colour of the yellow blossom of the Barbarea vulgaris that at first (I know something of botany) I mistook the yellow legs of a spider for the multifid stigma of the blossom. Last year I obtained two specimens of a small spider the exact colour of uncooked meat, which, in the same way, had entrapped two hive bees by lurking within the blossoms of Cnicus pratensis, from which it was undistinguishable in colour, and thus the unwary bees had visited their accustomed haunts, little thinking of the deadly enemy which awaited them therein. I presume that all these three instances are cases of "mimicry." I shall gladly send you the flowers, the spiders and the bees, if you think it worth the trouble of seeing them.—*C. W. Penny; Wellington College, Wokingham, May* 15, 1871.

I am greatly obliged by the offer of the insects and flowers, but I have seen so many similar instances that I require no ocular proof of the facts related. There can scarcely be a doubt that the colour of the spider is for the purpose of concealment, but it is not, as is so commonly the case, protective. The tendency of concealment in these cases is rather destructive than protective, at least in the case of the bee.

Works on Coleoptera and Diptera.—Is it your intention to bring out a book on either of these classes? as I am sure it would meet with as enthusiastic a reception as your Lepidoptera has already received.—*S. T. Klein; Haileybury College, Herts, May* 1, 1871.

I have no such intention; and I rather doubt the enthusiastic reception. Diptera are especially unpopular.

Error in British Moths.—Have not you got Plusia chrysitis figured as Festucæ, and *vice versâ?*—*C. E. Holford; High Oak House, near Ware.*

I think you will find this—which is a printer's, not an author's, mistake—corrected in p. 476 of the same work.

Gall on Salix nigricans.—A beautiful gall, of a bright scarlet colour and spherical form, occasionally makes its appearance on the upper side of the leaves of the black willow, always singly, and of that uncertain size generally compared to a pin's head. A specimen has been examined by one of our best-instructed students of this family of vegetable productions, Mr. H. W. Kidd, of Godalming, and it proves to be quite unknown to him. Can any other correspondent give it a name; the description, however imperfect, will distinguish it from all the other galls occurring in England: size of a pin's head; colour, scarlet; habitat, upper side of leaf of Salix nigricans.

EDWARD NEWMAN.

Entomological Notes, Captures, &c.

Xylomiges conspicillaris.—I have had the rare good fortune of breeding three beautiful specimens of Xylomiges conspicillaris this year: the first emerged on the 1st April, another on the 2nd, and the third on the 8th.—*Thomas Goodyear; Church Road, Malvern Links, April* 10, 1871.

Vanessa Antiopa near Sevenoaks.—I have a specimen of Vanessa Antiopa, which I took on Saturday, 22nd April, near Sevenoaks: it is a hybernated specimen and much injured. Mr. Newman has seen it alive.—*Charles Harris;* 32, *Pritchard's Road, Islington.*

Description of the Larva of Cabera exanthemaria.—There is such a meagre description of the larva of this insect in the 'British Moths' that I think I shall not be open to the charge of repetition in giving a more complete one:—Female specimens taken in the middle of June last deposited eggs, which hatched in about ten days: the larvæ fed on sallow, and were full grown at the end of July; when the markings were noticeable it became apparent there were two distinct varieties, which may be described as follows:—*Var.* 1. Length about an inch, of average thickness and uniformly cylindrical throughout. Head a little broader than the second segment, slightly flattened and not notched on the crown. Skin rather puckered; ground colour light green, of different shades in different individuals. Head of the same colour, marked near the crown and on the lower part of the cheeks with deep purple. A narrow green pulsating vessel forms the medio-dorsal line, and dorsally, on each segment, from the fourth to eleventh inclusive, is a conspicuous purple arrowhead mark, the apex of each being close to the posterior part of the segment, the apex of each of these marks incloses a black spot bordered with whitish; subdorsal lines yellowish-white, in some specimens very indistinct or wanting; an interrupted, irregular, dull purplish band forms the spiracular line. Spiracles and the usual dots black. Belly uniformly green, with the segmental divisions yellowish. Legs purple; ventral legs purple on the outside only. *Var.* 2. Brighter green than in var. 1, and the purple dorsal arrow-heads wanting, but having the distinct black dots on the posterior of the segments; the dorsal line is more distinct than in var. 1; the subdorsal lines yellowish, and the spiracular lines formed by a series of interrupted purple marks, most distinct on the anterior segments. Head without the purple marks on the crown, but marked with that colour on the cheeks as in var. 1.—*Geo. T. Porritt; Huddersfield, May* 11, 1871.

Ravages of Haltica fuscicornis at Grately, near Andover.—I lately received from Mr. H. B. Hill, of Grately, near Andover, a box containing several specimens of Haltica fuscicornis, which I have forwarded on to you. Since that Mr. H. has kindly furnished me with the following particulars respecting their destructiveness:—"We have had the same insects here for two years previous to this, but generally a month later. They appear to attack vetches and old ley saintfoin grass chiefly. They are to be met with in this locality all over the roads, crawling about; and after a shower of rain to be seen in thousands floating on the surface of every little pool of water; in fact, some of my work-people have had their little gardens *ruined* by them. They think that the atmosphere is full of them, for, having placed buckets of water outside their houses to try the effect, they find the surface of the water covered with them in the course of a few hours. However, my idea is that they are the same species as the common turnip-fly; and I hope the brutes will soon take flight again." Had Mr. Hill compared these insects with the turnip-fly (H. Nemorum), he would scarcely have mistaken them for the "same species," and would readily have seen the appropriateness of the specific term fuscicornis. —*Henry Reeks.*

Satyrus Tithonus, &c., in Ross-shire.—Mr. Davidson's courteous offer (Entom. v. 265), which I gratefully accept, should have been replied to before, but I have been absent from England during two months. With reference to the other species he mentions, Cymatophora Or has been recorded from Ross-shire by Mr. T. Blackman (E. M. M. v. 102); and by Dr. White, who took the larvæ of this species (E. M. M. v. 284) and of Notodonta Dictæoides (E. A. 1869), and also took Thyatira Batis (E. M. M. v. 284).—*H. Jenner-Fust, jun.; Hill Court, Berkeley, May* 7, 1871.

Solution of Corrosive Sublimate as a Preservative.—About four years ago Mr. Doubleday told me that if the under side of moths were dressed with a solution of spirits of wine and corrosive sublimate he believed that they would be safe from the attacks of mites and mould, and perhaps grease. I dressed all my insects *twice over* with this solution, and did not look at the insects again (having relinquished entomological pursuits for a time) till last March. I then found that several were greasy, that many, especially the Sphingidæ and Bombyces, were much injured by mites, and that one moth (A. Atropos) was mouldy. I think this shows that the application is not an infallible remedy for these pests; though I *do* think that had I not painted my insects with this solution they would have been in a much worse state than they were. The small-bodied insects, such as the Rhopalocera and the Geometræ, were quite uninjured, with the exception of a few antennæ.—*C. E. Holford; High Oak House, near Ware.*

Mites in Cabinets.—I mentioned that I had a cabinet of insects treated after Mr. Doubleday's process (corrosive sublimate and spirits of wine) that were left for six years, and they really were very slightly damaged, considering that they were not camphorised or, indeed, looked at, all that time; still mites *did* attack them. I may mention that during the said six years I had a lot of insects *undressed* and left in drying-cages: these were altogether consumed by mites and some description of Tinea.—*Id.*

Earliness of the Season.—As a further evidence of the earliness of the season, as illustrated by Mr. Raynor in the last number of the 'Entomologist,' I may mention that on the 4th of April I captured in my garden two specimens (male and female) of L. Argiolus; one, fluttering over a yew tree; and the other, resting on its foliage: and in the neighbourhood of Stonehouse I captured, on April the 25th, a specimen of D. unguicula; and, on May the 6th, a specimen of N. Lucina.—[*Rev.*] *Wm. Farren White; The Vicarage, Stonehouse, Gloucestershire, May* 17, 1871.

Chelonia villica feeding on Blackthorn.—Most authors agree in giving the chickweed (*Stellaria media*) or other low-growing herbs as the normal food-plants of this species. I have now some specimens of the larva in a breeding-cage, with chickweed and a branch of blackthorn (for other larvæ); I was much surprised to see Villica forsake its proper food and take to feeding on the sloe. Has any breeder of this species observed this habit before?—*R. Meldola;* 21, *John Street, Bedford Row, May* 18, 1871.

Questions on the Honey Bee.—1. How long will the honey bee continue to use the same old comb for brood and honey? 2. Which gathers the most and best honey; the common honey bee or the Ligurian? 3. Has the statement of M. Gelien, the Swiss author of 'Le Conservateur des Abeilles,' asserting that four hives, placed in one domicile, eat no more during the winter than a single one, ever been confirmed by the experiments of others? 4. Do bees ever gather honey from poisonous plants in such a way as to deteriorate the quality? 5. Has it yet been ascertained whether bees send out scouts for the purpose of choosing a new retreat prior to swarming? If any of your correspondents, who take an interest in the honey bee, can enlighten me on some of these points, I shall be extremely indebted to them.—*S. T. Klein; Hailsbury College, Herts.*

Stauropus Fagi on the Cotswolds.—Two specimens of this rarity I captured on the 13th of May in a beech and larch plantation on the Cotwolds, about five miles from Gloucester: they were at rest on the trunks of beech trees. A third specimen had been taken in the same place, about a week previously, by Mr. Marsden. This species, as far as I am aware, is new to the Gloucester district.—*Joseph Merrin; Gloucester.*

Acronycta Alni at West Stow.—Yesterday I captured a small, but beautifully coloured, specimen of Acronycta Alni, just out of the chrysalis, asleep on some palings at West Stow. I once took the caterpillar in the same locality on birch. — [*Rev.*] *A. H. Wratislaw; School Hall, Bury St. Edmunds, May* 19, 1871.

The Hornet gnawing the smooth bark of Elm—During the dry hot weather in August and September, 1870, I frequently noticed hornets (*Vespa Crabo*) gnawing the young and *smooth* bark from wood of eight or nine years' growth of a variety of Ulmus campestris or U. montana. So busily were they engaged that they would allow me to draw the branch sufficiently near to minutely watch their operations; but in no instance could I see that they carried on their work systematically, or removed the bark in circles: they only appeared to cut it with their mandibles to suck out the sap. —*Henry Reeks.*

Description of the Larva of Agdistes Bennetii.—In June and July Agdistes Bennetii is very plentiful around our island, flying over the Statice Limonium, which grows abundantly in our salt-marshes. I have often carefully watched the female, but have never been able to detect her in the act of depositing eggs, so that when or how this is done I cannot say. Last autumn I detected small green larvæ feeding on the leaves of the Limonium, which I thought must belong to the above species, but they were so unlike any other Lepidopterous larva that I am acquainted with that I determined to let them alone until the spring, when they would be larger. On the first of May last I walked to their head-quarters, and, after a careful search, succeeded in turning out about two dozen larvæ. They were at rest upon their food-plant, but fell off on the slightest disturbance, and so much resembled the Limonium in colour that it was only by searching for the plants, which showed signs of being eaten, I was able to find them. The larva, when full fed, is about 8 lines long; the head very small: and when the creature is at rest or disturbed it is drawn under the second segment, which is provided with two horn-like projections, and covers the head like a cowl. The third segment is the largest, and from this the body tapers gradually to the anal extremity; the last segment but one being provided with a horn, as in the larva of the Sphingidæ. Colour of the head brownish green, six small black spots, [ocelli] on each cheek, head sparingly covered with pale obtuse setæ, tips of the horns pink; the body bright green, shagreened with light and dark spots; anal segment green, with a ray of six long bristles, which point backwards. When about to change to a pupa the larva crawls to the top of the leaf, and spins across it numerous silken threads, to which it attaches itself by the anal claspers; and in this position remains about two days. The colour gradually becomes brown, the skin assuming a shrivelled appearance.

The final change is gone through very suddenly; a few minutes suffice to throw off the old skin, which remains in a little heap on the leaf, and the pupa then hangs freely suspended by the anal segment (or hooks?). It is very attenuated, and the points of the legs and wing-cases are free from the body.—*Henry Moncreaff; 145, High Street, Portsmouth, May* 19, 1871.

Death of Mr. Laycock.—William Laycock, of Highfield, Sheffield, died on the 8th of this present May, aged fifty-eight years. He was a wonderful example of industry in the pursuit of Entomology; and though a hard-working stone-mason, with very little time at his own disposal, he made such excellent use of it that, during the last twenty-five years of his life, he formed a beautiful collection of Lepidoptera, containing 670 species. He was a very patient observer; and his remarkable familiarity with the habits of the various species of moths and butterflies, combined with his own genial nature, made him a particularly interesting companion on an entomological ramble. He was most generous in distributing specimens, and also in imparting to others much useful information, which he had sought out for himself; and I doubt not that he will be much missed by a great number of his entomological friends.—*Samuel Doncaster; Broom Hall Park, Sheffield, May* 20, 1871.

Extracts from the Proceedings of the Entomological Society, May 1, 1871.

Variety of Rhodocera Rhamni.—Mr. Bicknell (on behalf of Mr. Cowan, who was present as a visitor) exhibited an extraordinary specimen of Rhodocera Rhamni, captured by Mr. Cowan at Beckenham, in March, 1870. This example was a male of the ordinary form, but the costal margin of each anterior wing was broadly, but unequally, suffused with brighter rose-colour or scarlet, and the right posterior wing was marked in a like manner. Mr. M'Lachlan suggested that possibly the wings of the insect had come in contact with some substance during hybernation, which had chemically altered the coloration. Mr. Janson said he had noticed that yellow insects killed by cyanide of potassium became red. Mr. Cowan said the individual exhibited had been killed by chloroform, and, moreover, it was in precisely the same condition when captured.

Shower of Insects at Bath.—Mr. Lewis, Mr. M'Lachlan and other Members brought before the notice of the meeting paragraphs that had been going the round of the newspapers concerning a phenomenon observed apparently on two recent occasions at Bath; it appearing that after violent storms the ground was covered with some creatures, variously described as Annelides and insects, which had baffled the knowledge possessed by the "scientific men" of that city. Prof. Westwood thought the creatures were probably Branchypus stagnalis, a large fresh-water entomostracon.

[It will be seen by a reference to a note (see page 313) appended to one of the numerous communications addressed to the 'Entomologist' on this subject, that I have ventured to express an opinion on a matter that "has baffled the knowledge of the scientific men of Bath," an opinion which is also at variance with Prof. Westwood's judgment that these minute worms were "a large freshwater entomostracon." —*Edward Newman.*]

Galls on Pteris aquilina.—Mr. Müller communicated the following note on a gall found on Pteris aquilina:—"In March, 1869, Mr. Rothney placed in my hands a chip-box containing a desiccated excrescence of about the size of a very large pea, and some Cynipideous insects, as well as two specimens of a Callimome. Mr. Rothney informed me at the same time that he had found this excrescence on the common bracken (Pteris aquilina) at Shirley. The excrescence was bleached to a straw-colour, but its condition prevented my being able to form a correct opinion as to the plant from which it was taken; and besides, apart a very doubtful case, I then knew of *no* gall on any fern. On dissecting the gall I found it composed of an accumulation of small larval cells, some of them still containing dead specimens of the maker. The insects being in a very bad condition, I did not think it worth my while to examine them, so I carded them with the excrescence and put them aside. Having lately had occasion to peruse Prof. Schenck's work on the Cynipidæ of Nassau, I found (at p. 127) the following observation:—'No. 69. There is in the collection of Herr von Heyden a gall on the bracken (Pteris aquilina), similar to that of Diastrophus Rubi; a swelling on the upper side of the stem, curved, resembling an episcopal staff, 1—2″ long, full of roundish pierced cells, pale yellowish; a similar straight one in the same collection has also been taken from that fern. A specimen agreeing with the above curved one is in my collection, but I do not well recollect on what plant I have found it. The galls on the fern belong probably to Diastrophus Rubi, with the gall of which they quite agree.' After reading this passage, I at once examined Mr. Rothney's Cynipidæ carefully, and although they are in a very bad condition I have not the slightest doubt that they are Diastrophus Rubi of Hartig and Schenck. It now only remains, to complete this observation, to breed D. Rubi from fresh undoubted fronds of the bracken. Probably the tips of unexpanded fronds are chosen by the insect for the deposition of its eggs; hence the subsequent curved shape of the gall, as described by Prof. Schenck."

[Galls are occasionally to be found on the common bracken before the frond has fully expanded.—*E. N.*]

Scydmænus rufus.—Mr. Champion exhibited Scydmænus rufus, *Mull. & Kunze*, a beetle new to the British list, recently captured by him in Richmond Park.

Proceedings of the Haggerstone Entomological Society.

February 2, 1871.—Mr. E. Barlow, President, in the chair. Mr. Barlow exhibited specimens of Anticlea berberata, Cidaria picata, Larentia didymata and Chesias spartiata. Mr. Healy, specimens of the following Saw-flies:—Selandria stramineipes, Dolerus æneus, Hylotoma enodis, Dolerus cinctus, Selandria pallipes, Tenthredo scutellaris, Nematus Capreæ and Cephus pygmæus. Mr. Elisha, specimens of Crambus paludellus, Chilo phragmitellus, Schœnobius mucronellus and S. gigantellus.

February 9.—Mr. Healy exhibited a box of Tineina pupæ, pupariums, cases and cocoons. Mr. Lorimer, specimens of Psodos trepidaria, Acontia luctuosa, Corycia taminata, Argyrolepia baumanniana, &c.

February 16.—Mr. J. A. Clark exhibited the following Sesidæ:—S. Philanthiformis, S. Chrysidiformis, S. Myopæformis and S. Cynipiformis. Mr. Lorimer, Odontia dentalis, Scotosia dubitata, Agrotis agathina, &c. Mr. Healy, a leaf of Cornus sanguinea (dogwood), having somewhat tooth-shaped galls projecting from the under side of the mid-rib: he observed that he had occasionally met with similar galls situate on the petiole at its junction with the leaf; sometimes no fewer than five of these galls were to be found on a single leaf, all clustered together in a bunch: he added that it was a common occurrence to meet with two or three so situated, each gall being inhabited by some three or four larvæ of a deep orange-yellow colour.

February 23.—Mr. Healy exhibited the following species of Tenthredinidous insects:—Athalia annulata, Hylotoma dorsalis, Selandria luteiventris, Nematus cinctus, Abia sericea, Tenthredo Rapæ and Cladius difformis. Mr. Lorimer, Catocala sponsa, Toxocampa Craccæ, Sterrha sacraria and Lycæna Arion. Mr. Healy, a beech leaf, having a small Lithocolletis mine on its upper surface.

Ninety-seven members attended the meetings this month.

March 3.—Mr. Bartlett exhibited specimens of Tryphæna orbona and Xylocampa lithoriza. Mr. Healy showed a pocket Tenthredo Calendar, which he was compiling. Mr. Raine, dark male examples of Hybernia leucophearia and specimens of Demas Coryli. Mr. Healy, a series of specimens illustrating the economy of Stigmonota Weirana and its mode of pupation. Mr. A. Harper, living specimens of Tæniocampa miniosa. Mr. Pratt, specimens of Nyssia hispidaria. Mr. Healy, the following Micro-Lepidoptera:—Anesychia funerella, Nemotois fasciellus, Gelechia longicornis, Cerostoma scabrella, Chrysoclista schrankella, Laverna decorella and Elachista apicipunctella.

March 9.—Mr. Healy exhibited specimens of Amphysa Walkerana, Ditula Hartmanniana, Sericoris euphorbiana, Euchromia flammeana, Coccyx ustomaculana, C. Vacciniana and Pamplusia monticolana. Mr. Boden, a fine series of bred specimens of Nyssia hispidaria. Mr. Harrison, a box of Macro-Lipidoptera. Mr. Healy, a species of gall growing out of the upper surface of a leaf of Viburnum lantana. Mr. Elisha brought a box of duplicate Lepidoptera for distribution amongst the members.

March 16.—Mr. Mundy exhibited specimens of preserved larvæ, together with a fine variety of Nyssia hispidaria. Mr. Boden, Catocala promissa, Agrotis cinerea, Dasycampa rubiginea and Cosmia pyralina. Mr. Bush, varieties of Nyssia hispidaria, together with bred specimens of Phigalia pilosaria and Cymatophora ridens. Mr. E. Barlow, a living bred specimen of Aleucis pictaria. Mr. A. Harper, examples of Nyssia hispidaria and Tæniocampa miniosa. Mr. W. Harrison, bred specimens of Agrotera nemoralis. Mr. Healy, a box containing specimens of Laverna ochraceella, Stathmopoda pedella, Oinophila V-flava, Asychnia terminella, Glyphipteryx schœnicolella, Gelechia Knaggsella and Coriscium brogniardellum. Mr. J. A. Clark, specimens of Eriogaster lanestris and dark varieties of Hybernia leucophearia.

March 23.—Mr. Raine exhibited a fine series of Nyssia hispidaria. Mr. Bryant, specimens of Plaptypteryx hamula, Cidaria corylata, Ephyra pendularia and Orgyia pudibunda, bred. Mr. Mundy, varieties of Abraxas grossulariata. Mr. Harper, a living specimen of Cymatophora ridens.

March 30.—Mr. Burry exhibited specimens of Brephos Notha. Mr. Bryant, fine specimens of Brephos Parthenias, Sericoris litterana, Macaria notata, Platypteryx lacertula and Pachycnemia hippocastanaria. Mr. Bush, beautiful examples of Brephos Parthenias, together with specimens of Trachea piniperda and Tæniocampa gothica. Mr. J. A. Clark, Notodonta chaonia, Xylocampa lithoriza, Cidaria suffumata and Pachycnemia hippocastanaria. Mr. Elisha, living larvæ of Epunda lichenea. Mr. Gibson, a very dark variety of Chelonia caja. Mr. Healy, two specimens of Parasia neuropterella bred a few years back by Mr. Eedle from teasel heads, thought at the time of collection to contain nothing but the larvæ of Eupœcilia roseana.

One hundred and twenty-seven members attended the meetings of the Society during this month.

W. Gates, *Secretary.*

THE ENTOMOLOGIST.

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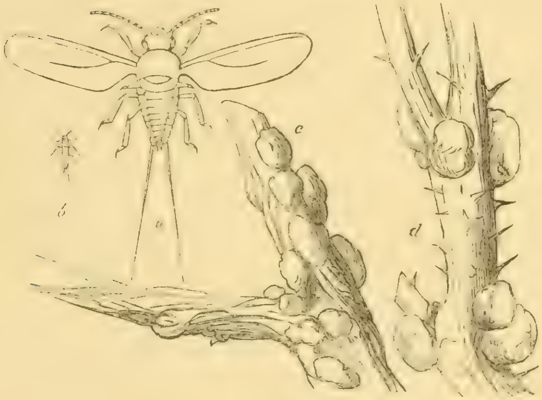
Answers to Correspondents.



SCALE-INSECTS.

a. Male scale-insect of the Cactus (*Coccus Cacti*), the cochineal of commerce, magnified, and with wings extended. *b.* The same, natural size, with the wings closed. *c.* Female scale insect of the vine (*Coccus Vitis*). *d.* Female scale-insect of the rose. All these females are represented of the natural size.

The Scale-insect or Mealy-bug.—Two generations of men have been born, and most of them have passed away, since Rusticus, of Godalming, published his account of the Coccus Vitis, the scale-insect or mealy-bug of the vine; and it was reprinted, at p. 123 of his collected letters, under my own personal superintendence in 1849. Rusticus was by no means the first author who had studied these strange insects: amongst others I may mention the illustrious Reaumur, who had devoted one of his admirable 'Memoirs' to its life-history exactly a century earlier; and our own Haworth has given some interesting particulars of its doings, at p. 307 of the first volume of the 'Entomological Transactions.' That excellent entomological artist, the late Mr. Curtis, more recently gave some information respecting the genus; and Mr. Westwood, at p. 446 of the second volume of his 'Modern Classification,' has a most interesting chapter on Cocci. This summer, dry and cold in an excessive degree, has been remarkable for its productiveness of scale-insects; and I have received a great number of communications and inquiries respecting them. One correspondent, at Canterbury, who sends me a sample of whitethorn loaded with obese females, avers that the "oldest inhabitant" had never seen anything of the kind before, a statement which, if correct, tends to prove that that venerated authority had not directed his attention to economic entomology, but cannot be regarded as sufficient evidence that scale-insects were unknown in Kent until the wretched summer of 1871. In reply to all enquiries on this subject, I cannot, perhaps, do better than cite the description given by Rusticus, which, though intended to apply only to the Coccus of the vine is equally applicable to many other species. I must, however, interpolate some additional details, which I have acquired either from Mr. Westwood's 'Modern Classification' or from my own observation:—The Coccus, or scale-insect, comes from an egg, which is laid in the manner hereinafter described, and my acquaintance with it begins with its babyhood or the dawn of its independent career. I was assisted in my investigations by my late friend Mr. Gratton, one of the most kind-hearted naturalists it has ever been my good fortune to meet with: he possessed an excellent microscope, which was always at my service under his own careful manipulation; and we spent hours together in examining the young of the scale-insect; we agreed on all subjects save one, and on that we agreed to differ. Mr. Gratton regarded animal life created to reveal the powers of his microscope, or, as he expressed it, to "test" the powers of his microscope; I believed his microscope created to reveal the wonders of animal life. We were perpetually delighting in the same discovery; we were perpetually thinking, and often exclaiming simultaneously: "What an excellent microscope;" "What a wonderful object." But I am losing sight of the infant Coccus, in the vivid recollection of the genial man who first introduced us to each other. The young Coccus first treads the stage of active life in the character of a minute hexapod spider: it is of a reddish brown colour, and appears a spider in all things except in the number of legs; a spider ought to possess eight. I do not doubt that in this state it is often denominated the "red spider," and treated with nostrums originally devised for the destruction of that mischievous mite. The young Cocci, which Mr. Gratton and I examined, were obtained from the seeds of the whitethorn; and I am bound to confess that we allowed them to escape without being able to supply a "missing link" in their biography, which should have united their active spider-life to their vegetative existence: we examined them as spiders again and again; we obtained minute scales from the same localities only a few days afterwards; but we never found any direct evidence that the one had been transformed into the other. I feel very confident that the authorities correctly assert that these spider-like creatures anchor themselves in the rind of the twig by means of their sap-sucking rostrum; but I never witnessed the operation. A very few days elapsed between the escape of the insects from the eggs and their reappearance as little scales or shells tightly fixed on the rind of the twig, and, of course, perfectly immovable: the rostrum is, doubtless, the instrument by which this anchorage is effected. This rostrum, or piercing organ, appears to come from the very centre of the stomach, but the appearance is not real: the rostrum is, without doubt, a portion of the head, like the mouth of all other insects; but the fore part of the head, and in consequence the mouth, of the scale-insect, is bent under the breast until the mouth is brought into the situation described: this arrangement can only be observed by lifting up the scale-like creature and laying it on its back. At first all these infant Cocci are alike in size and shape: they look just like a parcel of tiny tortoises fixed to the rind, and sometimes to the leaves. Like most other insects the Cocci are males and females; neither in their spider-life nor in the first few days of their scale-life have I been able to distinguish the sexes; but after these first few days there is an obvious difference in size; the females grow rapidly, but the males do not change: they arrive at their full stature very speedily, and a very small stature it is; each changes to a chrysalis, and forthwith to an imago; it then bursts a hole in its tortoise-like covering and flies away, impatient to obtain its liberty. How different from its former self; different from its arachnoid existence; different from its scale-like state,—it has now a transverse hammer-shaped head, with moniliform antennæ and facetted eyes; two ample wings which, when not in action, lie one over the other flat on its back; and two long bristle-like tails at the extremity of its abdomen protruding, far beyond the tips of its wings. While the males thus undergo a metamorphosis as complete as any recorded by Ovid, the females are "changeless as the eternal rocks;" they are obese and apparently lifeless lumps; they receive the attentions of the males with the most stolid indifference, and I even doubt whether, in the economy of nature, it is a necessity for these apathetic creatures to receive such attentions at all, for there is no such a thing among scale-insects as an infertile female. The female is so closely attached to the rind of the young shoot, the sap of which she is sucking, that it is impossible to remove without killing her: she gradually swells until she attains an immense size, when her whole body becomes a bag of eggs; she begins laying with her body glued down all round to the twig, but between her body and the rind, except just at the edges, is a quantity of gummy cotton spread over the whole space which she covers. The laying of eggs is on a different system to that of other insects: the first egg is laid in the cottony substance, without any disturbance to the margin of the body glued to the rind; it does not adhere like the eggs of many other insects, but lies loose in the cotton; then another egg is laid, which pushes the first a little forwards; and then another, and another, none of them being visible from without; so that all the eggs that a female Coccus lays she incubates or sits on like an old broody hen. As the eggs increase in number they also increase in size, and the mass raises the ventral surface of her body into a manifest concavity, so that the body itself gets thinner and thinner, while the pile of eggs it covers gets thicker and thicker. At last her stock of eggs is exhausted; the lower or ventral skin of her body meets the upper or dorsal skin, and grows hard and fast against it: then the old lady dies, and her body,—that is to say, what little is left of her body,—like the roof of a house, protects the family below from all casualties of wind and weather. In a few days, after the death of the mother, the eggs hatch and become the lively little runners I have already described. They first devour the cottony stuff among which they were born, and then lift up the roof-like covering formed by the dried cuticle of their defunct parent; and each selects his own path in life, never to return. Several species seem to be true natives of this country; others are certainly only denizens.

A new Insect-enemy of Turnips and Rape.—You are perfectly aware that I do not possess any scientific knowledge in Entomology, but, as you have so laudably set apart a portion of the 'Entomologist' for recording facts connected with economic Entomology, I know that you will be pleased to receive any trustworthy testimony on behalf of such. Last evening my brother and I, while walking across a piece of newly-sown rape (*Brassica Napus*), discovered that thousands of minute insects—so minute that my pocket-lens was not sufficiently powerful to reveal the order they belonged to—were puncturing and feeding on the cotyledons, or first leaves; and so quickly did they spring off that I had to return home for some gum and a sheet of white paper, which, when well gummed and hastily turned over the plant, secured about a score specimens, and these I have to-day forwarded to you in a box, the bottom of which had also to be thickly gummed to keep the little skipping fellows in. Though they may turn out to be the commonest of all known insects, these are certainly new to me as being destructive to rape and turnips; for, although I have farmed extensively for twenty years, I never noticed them before; and I think you will agree with me that I do not always "go about with my eyes shut." I know that little pest, the turnip-fly (*Altica Nemorum*), only too well; but these appear equally destructive, and equally nimble. Will you, therefore, kindly tell me their names, and what you know of their economy?—*Henry Reeks; East Woodhay, May* 24, 1871.

These minute insects were so clogged with the gum introduced for the purpose of preventing their escape, that I cannot decide with certainty on their names: I believe, however, that they are a species of Poduridæ, perhaps Smynthurus fuscus. I should much like to see living specimens: they may be sent safely in a glass tube. The fact of such insects being destructive to rape and turnips is quite new to me, and is very interesting.

Shower of Insects at Bath.—Your article in the 'Entomologist' for last month brought to my mind one by the Hon. Mrs. Ward, published in the 'Intellectual Observer' in 1864: it occurs in vol. v. p. 13. Mrs. Ward observes:—"On the 20th August I received from a friend a little box containing a pale jelly-like substance, and a paper containing about thirty black grains, at first sight resembling dry tea. The information my friend sent with them was, 'that they were found on the deck of his yacht, the vessel being moored, as usual, at some distance from land in an inlet of Lough Ree, county Westmeath.' * * * I wrote to ask a few questions concerning the jelly and black grains, and ascertained the following particulars:—'The boatman, whose duty it was to scour the deck each morning, was repeatedly annoyed by finding spots of jelly lying on the deck, &c. He at first thought he had taken it up when wetting the deck with water taken from the lake; but when the weather became so rainy as to make this artificial wetting unnecessary, he still found them.' * * * Having now detailed the antecedents of the jelly, I proceed to the second part of my story. I left the jelly for five days in a tumbler (of water), out of sight, and, I believe, to a certain extent, out of mind also; and the small portion of that with brown particles, which I had last examined with the microscope, remained still in the animalcule cage, slightly flattened between its two disks of glass. On placing the animalcule cage under the microscope, on August 25th, I saw with sudden surprise that several singular-looking larvæ had made their appearance among the jelly. That they had been produced from the brown particles was evident, as many empty shells were visible, and other similar larvæ could be discerned ready to come out of the particles, or eggs as they may in future be called. * * * I at once recognised their forms as familiar to me. A similar insect, with its strange seal-like head and tiny pairs of feet, seal-like also, had often thrust itself across the field of view—a giant among pigmies—while I have been examining minute animalcules with one of the higher powers of the microscope. The larvæ appeared perpetually struggling to free themselves from the jelly, and always incommoded by the slippery glass above and below them, except when they indulged in a lively dance in the surrounding drop of water. Their gait in this movement having reminded me of the common blood-worm (larva of Chironomus plumosus, an insect nearly allied to the gnats), I obtained one of the latter from a water-trough, which abounded in its mud hiding-places, and observed that the new larvæ were very similar to it. This gave me a hint for the more comfortable establishment of the little Westmeath strangers. I placed them in a wine-glass half full of stagnant water: in less than half an hour numbers of the little larvæ had rolled themselves in mud-cases. Meanwhile, the green particles" (previously described by Mrs. Ward as existing in the jelly, which appears to have been of two kinds) "remained unaltered. As may be supposed, they were inspected daily with great curiosity. On the 2nd September the uniform green spots were evidently seen to be exchanged for *something moving:* they proved to be the caddis-worm, larva of the caddis-fly. * * * The jelly, then, was no other than the eggs of insects; and its appearance corresponded with some descriptions given by Westwood (Intoduction to 'Modern Classification of Insects,' vol. ii. pp. 62, 516). He speaks of the eggs of one of the Chironomus family as deposited on the leaves of aquatic plants, and covered with a mass of gluten; and he says of the caddis-flies (Phryganeidæ) that they deposit their eggs in a double gelatinous mass, which is of a green colour. * * * And now," adds Mrs. Ward, "after all, how did the jelly get upon the deck of the 'Dulcinea'? No doubt Chironomus and Phryganea deposited them there; but why so recklessly over sail-coat, coil of rope and deck instead of in the lake close at hand? *That* I do not attempt to explain." Mrs. Ward's description tallies so exactly with the statement in the 'Entomologist,' that there seems no room to doubt that the *jelly* on the deck of the yacht, and the glutinous globules on the railway platform at Bath, are identical. If, as represented, they *fell* on the platform, they must either have been dropped by the parent insect in the air or have been carried thither by the wind. But, *did anyone see* them fall? Was not their supposed fall rather a conclusion, drawn from the circumstance of their lying on the ground, and no producing cause being apparent? I should rather be inclined to suppose that they were deposited by the insects on the platform either just before or during the rain; but *why* they were there deposited I cannot hazard a guess. —*W. Slade; London and County Bank, Buckingham, June* 10, 1871.

Saturnia Carpini.—This year I had a quantity of Carpini pupæ, most of which came out in April, yet I have about a dozen still in cocoon. I have looked at them, and find they are alive. When are they likely to come out?—*W. J. Skelton; The Bounds, near Faversham, Kent, June* 22, 1871.

I have generally found that when Bombyces fail to emerge at the usual time, they emerge at the corresponding period of next year.

Pœcilocampa Populi.—The larva found by Mr. Garrow, feeding on birch, is that of Pœcilocampa Populi.

EDWARD NEWMAN.

Description of the Larva of the Beautiful Hooktip.—It lies in a perfectly straight position, with the ventral surface closely appressed to the object on which it is resting, usually the twig or branch or trunk of a tree, or an old rail, or park palings: one condition of this object is indispensable, —it must be clad with the lichens which constitute the sole food of this species, and which it so closely resembles in colour and appearance that it requires the keenest, as well as the most practised, sight to detect its presence; it does not fall readily, and is quite indifferent to the touch of a finger, but if forcibly removed it falls in a limp and flaccid manner, and makes no attempt to roll in a ring or adopt any other expedient for safety or concealment, perhaps because possessed of the intuitive knowledge that its colour and appearance sufficiently conceal it from the prying eyes of birds and entomologists; in crawling, its action is that of a half-looper, Catocala for instance, the back being alternately raised and depressed with a gently undulating motion. The head is rather narrower than the second, and decidedly narrower than the third, segment; its position when at rest is semiprone; the face is flat, and the crown scarcely perceptibly notched. The body is of nearly uniform width throughout, but slightly wider, as already noticed, at the third segment; the twelfth segment is slightly elevated dorsally, and the elevated portion bears two small tubercles or warts placed transversely; the dorsal surface is convex and transversely wrinkled; its division into segments is perceptible, but not conspicuous; the ventral surface is flat; the dorsal slightly overlaps the ventral surface, its margin being dilated and fringed with a series of slender fleshy appendages, bearing the same relation to the body, both in position and appearance, as the rootlets of ivy to the climbing twig from which they emanate. The legs are rather long, incurved or sickle-shaped, and the claws sharp-pointed, admirably adapted for clinging to the lichens growing on the perpendicular surface on which the larva constantly resides; the claspers are ten in number; the ventral pairs increase in size as they recede from the head, the first pair being the smallest, the second slightly larger, and the third and fourth still larger, longer and stronger; the anal claspers are slightly spreading, and extend considerably beyond the rounded extremity of the anal flap. The head and body emit a number of scattered hairs, each seated on a minute wart. The colour of the head and body is green-gray, the head being more decidedly gray and the body more decidedly green; the head has two crescentic black marks on the face, and two black spots on the crown; the cusps of the crescents are directed towards the crown; the component parts of the mouth are black, and there is a black transverse line immediately above it; the ocelli on each cheek are black, and surrounded by a slender black ring; the body has numerous black spots and dots irregular in size and shape; the legs are spotted or annulated with black, and the claws entirely black. The life-history of this interesting insect is entirely unknown to me: the full-grown larva I have described, this 2nd day of June, is the only one I ever saw; it was most obligingly presented to me by Mr. Machin, whose knowledge of our British Lepidoptera is almost unsurpassed, and whose contributions to the mass of knowledge collected in the 'Entomologist' are familiar to all its readers. A word remains to be said about the scientific name and the affinities of this interesting insect: it is the Phalæna sinuata of Villars; the Geometra flexularia of Hübner; the Pyralis flexulalis of Haworth's 'Prodromus;'

the Falcaria flexula of the same author's 'Lepidoptera Britannica;' the Ennomos flexula of Stephens; and the Aventia flexula of Duponchel and Herrich-Schæffer. Almost every author has adopted the beginning of the word flexula for its specific name; but, finding it so flexible, has twisted the caudal extremity in every possible direction. The prevailing idea seems to be that the insect is the Phalæna flexula of Fabricius, an idea that cannot possibly be derived from reading that most learned entomologist's description of the larva, which is as follows:—"Larva virescens; collo gibbo, elevato, caudâ acuminatâ; capite pedibusque rufescentibus." The humped back and sharp-pointed tail point to the genus Platypteryx; and the red head and legs are totally inapplicable to the insect under consideration. A generic name is of little importance; but I question the propriety of associating our insect with either of the genera I have named above. If it be compulsory to designate it by a generic name, I would suggest Craspedocampa (fringed caterpillar), as descriptive of its very peculiar larva. The earliest specific name, that of "sinuata," must fall, having been universally applied to another species of Geometra; and if we take the next in order of priority, "flexularia" of Hübner, the name will stand as Craspedocampa flexularia. Its affinities, both as regards larva and imago, are with Metrocampa margaritata, and its place in the system would be next to that familiar species.—*Edward Newman.*

Notes on Phigalia pilosaria.—Three moths, two males and one female, emerged from chrysalids on the 6th and 7th of February: they were kept together in a glass-topped paper-box, in which a piece of dead oak branch had been introduced. On the 15th of February the female was busy the whole day ovipositing: the eggs were of a light drab colour, semitransparent and iridescent, and of a long oval shape; they were deposited on the outside of the bark, as well as deep in the interstices, and under, as well as on, lichen; those on the outside were stuck up on end. About the beginning of March the eggs were a rich brown; afterwards dark purple; and the 9th of April (the day they hatched out) they were of a bright metallic-blue. The young larvæ were of a smoky black colour; the segmental divisions very light and distinct. When the larvæ moved they were rather nice in their choice of food; and out of above two hundred larvæ I at last got about thirty to feed on blackthorn (they refused oak buds). The beginning of May they gave up the blackthorn for oak, and fed up fast: they were then from $\frac{3}{8}$ths to $\frac{5}{8}$ths of an inch in length, and varied in colour from a pale sienna (or ochre) brown to a dark smoky brown, and mottled (or freckled) all over with a lighter tint, ranging from bright lemon-yellow to a vermilion; the brighter the ground colour the nearer red the mottling, and *vice versâ;* the warty excrescences are now observable, two on each of the fifth, sixth and seventh segments. They rest by day, holding by the four claspers. The head a little elevated; the body arched. About the middle of May they shed their skins the last time: they are now very lethargic, seldom moving unless in search of food, and clinging tightly by the legs and claspers to their food plant. Their colour is now very much like an oak twig: ground colour of a rich sienna-brown, mottled with a light gray, and speckled at the sides with bright yellow or orange spots. At the end of May they began to go down to change, being then from $1\frac{3}{8}$ths to $1\frac{5}{8}$ths of an inch in length.—*William H. Smith; 5, Cedar Terrace, Sevenoaks.*

Contributions towards the Life-history of Lycæna Argiolus.—I am indebted to the zeal and kindness of Mr. Wellman and Mr. Biggs for the opportunity of describing the egg and the larva of Argiolus, and for information respecting its economy, which I have great pleasure in laying before the readers of the 'Entomologist.' Early in May Mr. Biggs took some specimens of the perfect insect, in Epping Forest, and put them in his collecting-box: he found on his return home that one of these had deposited twelve eggs on the cork of the box; a few days later he cut out the portion of cork to which the eggs were attached, and took it to Mr. Wellman, and it is now before me. The form of the egg is spheroid, depressed at the crown, and flattened at the base, by which it was firmly attached to the cork; the colour was a delicate very faint green, which vanished, the shell becoming colourless, resembling white porcelain when the infant larva emerged, which event took place on the 19th of May: the surface of the shell could then be examined with ease, and was found to be reticulated or pitted, with excessively fine partition-walls between the pits; the interior of the empty egg-shell is lined with a glittering substance like tinfoil. Mr. Wellman supplied the young larvæ, with this year's tender shoots of holly, from his garden, on the soft leaves of which they immediately began to feed, settling themselves on the under side of the leaves. They moulted for the first time on the 2nd of June, and the second time on the 12th, and on the 20th appeared to be full grown and preparing to enter the pupa state, the leaves being still soft and succulent, and exhibiting the operations of the larvæ by small round holes, like shot-holes, on the disk: I observed no instance in which they had eaten the margin. When full fed these larvæ rest on the young leaves of the holly in a flat position, with the ventral surface appressed to the polished surface of the leaf, and the head, legs and claspers entirely concealed: if annoyed it falls to the ground, and lies for a few seconds with both extremities slightly incurved; the head is almost globular, but slightly produced towards the mouth; it is very small, not being more than one-third as wide as the second segment, and entirely retractile within that segment at the pleasure of the larva: the body is of the shape of a Chiton; the divisions of the segments are decidedly marked; the second segment has the anterior margin semicircular and projecting over the head; the posterior margin of the fourth and each following segment slightly projects over the next following segment; there is a slight medio-dorsal depression on all these segments, so that the back appears to have a double series of approximate humps, two on each segment, from the third to the tenth inclusive; the lateral margin of all the segments dilated; the entire dorsal surface is finely shagreened or sprinkled with approximate yellow glandular dots; in this respect the skin having the appearance of the glandular surface of the twigs or leaves of many plants, and being clothed with pale hairs. The head is black and highly glabrous; the body apple-green, with very oblique lines on each side of a darker green; these oblique lines are very indistinct: on the tenth segment is a diffused red spot, also indistinct; the ventral surface and claspers are apple-green; the legs are almost colourless and semi-transparent. It will be observed that only two moults have been noticed. I do not wish to express any opinion whether this is the normal number.—*Edward Newman.*

List of Diptera collected in Egypt and Arabia, by J. K. Lord, Esq.; *with Descriptions of the Species new to Science, by* F. Walker, Esq., F.L.S.

(Concluded from p. 275.)

Milesinæ.—Gen. Eumerus, *Meig.*

56. *E. ruficornis*, Meig. Zweifl. iii. 206. Cairo. Inhabits Europe.

Gen. Paragus, *Latr.*

57. *P. bicolor.* Syrphus bicolor, *Fabr. Ent. Syst.* iv. 297. Cairo. Inhabits Europe.

Fam. Conopidæ.—Gen. Conops, *Linn.*

58. *C. vittatus*, Fabr. Ent. Syst. iv. 392. Cairo. Inhabits Europe.

59. *C. pusillus*, Meig. Zweifl. iv. 131. Cairo. Wâdy Ferran. Inhabits Europe.

60. *C. auratus. Male.* Tawny, covered with gilded tomentum. Head yellow. Eyes piceous. Proboscis tawny; tip black. Antennæ tawny; club fusiform. Abdomen about twice the length of the thorax; petiole somewhat stout, rather more than half the length of the following part, slightly decreasing in breadth from the base to the tip; the following part or club gradually increasing in thickness from its base to near its tip. Legs tawny. Wings pellucid; veins black, testaceous towards the base. Halteres pale testaceous. Length of the body 6 lines. Hor Tamanib.

Gen. Physocephala, *Schines.*

61. *P. chrysorrhœa*, Meig. Zweifl. iv. 128. Cairo. Mount Sinai. Inhabits Europe.

Fam. Tachinidæ.—Gen. Micropalpus, *Macq.*

62. *M. vulpinus.* Tachina vulpina, *Fall. Musc.* 23. Cairo. Hor Tajora. Wâdy Ferran. Mount Sinai. Inhabits Europe.

Gen. Eurigaster, *Macq.*

63. *E. leucomelas. Female.* Black, stout. Head with

gilded tomentum and with many black bristles; fore part and hind part with silvery tomentum, the latter with white hairs; frontalia linear; facialia with bristles by the epistoma, which is slightly prominent. Eyes bare. Palpi tawny. Antennæ red; third joint black, red at the base, reaching the epistoma, about four times the length of the second joint; arista slender, longer than the third joint. Thorax with many long stout bristles on each side, with cinereous tomentum and with four black stripes. Scutellum ferruginous, black at the base. Abdomen tessellated with cinereous, with some stout black spines towards the tip. Wings pellucid; veins black, testaceous at the base; præbrachial vein forming an obtuse angle at its flexure, joining the costal vein at some distance from the tip of the wing; discal transverse vein slightly undulating, parted by less than its length from the border and by much less than its length from the flexure of the præbrachial; alulæ white. Length of the body 5 lines. Hor Tamanib.

64. *E. incisus. Male.* Black, stout. Head with silvery white tomentum, which is brightest on the facialia; frontalia deep black, linear, with a row of bristles on each side, and with an elongated black spot on each side where they join the facialia; one long bristle and a few short bristles on each side of the epistoma, which is slightly prominent. Eyes bare. Palpi tawny. Antennæ nearly reaching the epistoma; third joint linear, about four times the length of the second; arista much longer than the third joint, slightly incrassated for about half the length from the base. Thorax with cinereous tomentum, with some short bristles on each side and with four black stripes. Abdomen with many stout bristles on each side and at the tip; three very broad shining cinereous bands, the first and second very narrowly interrupted in the middle; under side cinereous, black towards the tip. Wings cinereous; veins black; præbrachial vein forming a slightly obtuse angle at its flexure, near which it is slightly bent and is thence straight to its tip, which joins the costal vein at some distance from the tip of the wing; discal transverse vein hardly undulating, parted by much less than its length from the border and from the flexure of the præbrachial; alulæ white. Length of the body 4 lines. Hor Tamanib.

Gen. FRONTINA, *Macq.*

65 *F. latifascia. Female.* Black, slender. Head with

silvery white tomentum; frontalia cinereous, slightly widening towards the antennæ, with a row of black bristles on each side; one long bristle and a few short bristles on each side of the epistoma, which is hardly prominent. Eyes bare. Palpi testaceous. Antennæ not reaching the epistoma; second joint red at the tip; third linear, hardly more than twice the length of the second; arista very much longer than the third joint, stout for nearly half the length from the base. Thorax and abdomen with cinereous tomentum; a few bristles on each side. Abdomen elliptical; first and second segments towards the hind border and third wholly black and shining. Wings cinereous; veins black; præbrachial emitting a branch and forming a slightly obtuse angle at its flexure, nearly straight from thence to its tip, which joins the costal vein at some distance from the tip of the wing; discal transverse vein undulating, parted by a little less than its length from the border and by much less than its length from the flexure of the præbrachial; alulæ white. Length of the body 3 lines. This species is referred with doubt to the genus Frontina. Wâdy Gennêh.

Gen. MILTOGRAMMA, *Meig.*

66. *M. minuscula. Female.* Black. Head silvery white; frontalia tawny, linear, with a few short bristles on each side; facialia without bristles. Eyes bare. Antennæ setaceous, not near reaching the epistoma; third joint full twice the length of the second; arista stout, a little longer than the third joint. Thorax and abdomen with a few bristles on each side. Thorax cinereous. Abdomen red, with four black bands; third and fourth broad; fourth apical. Legs black. Wings pellucid; veins pale testaceous; præbrachial vein forming a slightly oblique angle at its flexure, near which it is slightly bent, and is thence straight to its tip, which joins the cubital vein at some distance from the tip of the wing; discal transverse vein straight, parted by more than its length from the border, and by less than its length from the flexure of the præbrachial; alulæ white. Length of the body 2½ lines. This species perhaps belongs to a distinct genus. Tajura.

Gen. GONIA, *Meig.*

67. *G. guttata. Female.* Testaceous, stout. Head with three black dots on each side of the fore part, two of them

contiguous to each eye, and the third between the eye and the peristoma; frontalia linear, with black bristles along each side; two black bristles on each side of the facialia near the epistoma, which is prominent. Eyes bare. Proboscis black. Antennæ not reaching the epistoma; third joint darker at the tip, a little more than half the length of the second; arista slender, except at the base, full twice the length of the third joint. Thorax and pectus black. Thorax with bristles on each side; a testaceous spot on each shoulder; scutellum testaceous, with six long and several shorter black bristles. Abdomen with four black dots along each side, with many short and slender black bristles, those at the tip longer and stouter; third segment with a black longitudinal streak. Tarsi piceous towards the tips. Wings cinereous; veins testaceous; præbrachial vein forming a very obtuse angle at its flexure, very slightly curved from thence to its tip, which joins the cubital vein at some distance from the tip of the wing; discal transverse vein slightly undulating, parted by less than its length from the border and from the flexure of the præbrachial; alulæ white. Length of the body 3½ lines. This and the following species differ much from the typical form of Gonia. Tajura.

68. *G. insueta. Male.* Cinereous, with no bristles, excepting those along the frontalia. Head silvery white; frontalia tawny, linear, with two or three short slender bristles on each side. Antennæ piceous, not reaching the epistoma; third joint linear, about thrice the length of the second; arista as long as the third joint, incrassated for more than half the length from the base. Thorax with three very indistinct paler stripes. Abdomen testaceous. Legs cinereous, short, stout; knees tawny. Wings pellucid; veins testaceous; præbrachial vein forming an obtuse angle at its flexure, slightly curved from thence to its tip, which joins the cubital vein at some distance from the tip of the wing; discal transverse vein nearly straight, parted by less than its length from the border and from the flexure of the præbrachial; alulæ white. Halteres testaceous. Length of the body 2 lines. Tajura.

Fam. SARCOPHAGIDÆ.—Gen. SARCOPHAGA, *Meig.*

69. *S. carnaria.* Musca carnaria, *Linn. Syst. Nat.* i. 2,

990. Cairo. Wâdy Genneh. Wâdy Ferran. Tôr. Mount Sinai. Inhabits Europe.

70. *S. hæmorrhoidalis,* Meig. Zweifl. v. 28. Wâdy Genneh. Wâdy Ferran. Wâdy Nash. Mount Sinai. Inhabits Europe.

71. *S. lineata,* Meig. Zweifl. v. 26. Cairo. Inhabits Europe.

72. *S. redux?* Walk. List Dipt. iv. 812. Cairo. Inhabits South Africa.

Gen. SARCOPHILA ? *Rondani.*

73. *S. guttata. Female.* Black, with cinereous tomentum. Head with silvery tomentum; frontalia cinereous, linear, with some short slender bristles on each side; facialia with a few bristles by the epistoma, which is slightly prominent. Eyes bare. Antennæ black, nearly reaching the epistoma; third joint rather broad, about four times the length of the second; arista much longer than the antennæ, pubescent and slightly incrassated for half the length from the base, very slender from thence to the tip. Thorax with some stout black bristles on each side, with two large black spots on each side and with five black stripes; middle stripe very narrow. Abdomen elongate-conical, red at the tip, with some stout bristles and with three black spots on the hind border of each segment. Legs stout, setose. Wings cinereous; veins black, testaceous at the base; præbrachial vein forming a right angle at its flexure, near which it is curved, and is thence straight to its tip, which joins the costal vein far from the tip of the wing; discal transverse vein hardly undulating, parted by a little more than its length from the border and by much less than its length from the flexure of the præbrachial; alulæ white. Length of the body 5½ lines. Tajura. Wâdy Genneh.

Fam. MUSCIDÆ.—Gen. CHRYSOMYIA, *Desv.*

74. *C. Elara,* Walk. List Dipt. B. M. iv. 870. Cairo. Wâdy Ferran. Inhabits South Africa.

Gen. LUCILIA, *Desv.*

75. *L. illustris.* Musca illustris, *Meig. Zweifl.* v. 54. Cairo. Massowah. Tajura. Inhabits Europe.

Gen. CALLIPHORA, *Desv.*

76. *C. erythrocephala.* Musca erythrocephala, *Meig. Zweifl.* v. 62. Cairo. Inhabits Europe.

Gen. MUSCA, *Linn.*

77. *M. corvina,* Fabr. Sp. Ins. ii. 440. Cairo. Mount Sinai. Inhabits Europe.

78. *M. domestica,* Linn. Syst. Nat. i. 2, 990. Cairo. Wâdy Ferran. Inhabits Europe.

Gen. IDIA, *Meig.*

79. *I. xanthogaster,* Wied. Auss. Zweifl. ii. 349. Hor Tamanib. Inhabits Hindostan.

Fam. ANTHOMYIDÆ.—Gen. ANTHOMYIA, *Meig.*

80. *A. muscoides. Male.* Cinereous. Head silvery white above and in front, with black bristles along the frontalia; some stout bristles on each side of the epistoma. Eyes bare. Antennæ black, reaching the epistoma; arista slender, except at the base. Abdomen testaceous; first, second and third segments with a black triangular spot on each; third spot joining the apical black part of the abdomen. Legs black. Wings cinereous; veins black; discal transverse vein slightly curved inward, parted by less than its length from the border and by more than its length from the præbrachial transverse vein; alulæ white. Length of the body 2¾ lines. Cairo.

81. *A. conica,* Wied. Zool. Mag. i. 79. Cairo. Inhabits Europe.

82. *A. meteorica.* Musca meteorica, *Linn. Faun. Suec.* 1849. Cairo. Inhabits Europe.

Fam. ORTALIDÆ.—Gen. DACUS, *Meig.*

83. *D. sexmaculatus. Male.* Reddish, slender, testaceous beneath. Head testaceous, with a black dot on each side of the facialia. Eyes piceous. Palpi long, slender. Antennæ reaching the epistoma. Thorax with a black spot on each side near the scutellum, which is testaceous. Abdomen with a black spot on each side of the second segment. Legs testaceous. Wings pellucid, with a black costal stripe, which is slightly dilated at the tip; veins black, testaceous at the base; discal transverse vein nearly straight, parted by

one-fourth of its length from the border and by much more than twice its length from the præbrachial transverse vein. Length of the body 3 lines. Harkeko.

Gen. Ulidia, *Meig.*

84. *U. rufifrons. Female.* Golden green. Head and antennæ red, the latter not reaching the epistoma. Eyes black. Antennæ piceous; third joint conical. Legs black; hind tarsi testaceous. Wings pellucid; veins pale testaceous. Length of the body 2½ lines. Cairo. Wâdy Ferran.

Gen. Herina, *Desv.*

85. *H. Urticæ.* Musca Urticæ, *Linn. Faun. Suec.* 1875. Cairo. Inhabits Europe.

86. *H. strigulosa. Male.* Black, shining. Head and four anterior legs testaceous. Eyes piceous. Hind legs black. Wings black, with seven white streaks; first streak extending from the base near the costa; second and third extending from the costa to the disk; third much longer than the second; fourth oblique near the tip; fifth, sixth and seventh extending from the hind border to the disk. Length of the body 2 lines. Nearly allied to H. Cerasi. Wâdy Ferran.

Gen. Urellia, *Desv.*

87. *U. radiata.* Musca radiata, *Fabr. Ent. Syst. Suppl.* 565. Cairo. Wâdy Ferran. Inhabits Europe.

Gen. Terellia, *Desv.*

88. *T. Serratulæ.* Musca Serratulæ, *Linn. Syst. Nat.* i. 2, 997. Cairo. Inhabits Europe.

Fam. Sepsidæ.—Gen. Nemopoda, *Desv.*

89. *N. varipes. Female.* Æneous-black. Antennæ black. Four anterior legs testaceous. Hind legs piceous; femora towards the base and coxæ testaceous. Wings pellucid; veins black. Length of the body 1¼ line. Cairo.

Fam. Oscinidæ.—Gen. Oscinis, *Latr.*

90. *O. rufescens. Female.* Reddish. Head testaceous, with a triangular black spot on the vertex. Antennæ testaceous; arista stout, black. Thorax with two black stripes Abdomen blackish towards the tip. Legs testaceous. Wings slightly cinereous; veins black. Length of the body ¾—1 line. Cairo.

Fam. PSILIDÆ.—Gen. PIOPHILA, *Fall.*

91. *P. Casei.* Musca Casei, *Linn. Faun. Suec.* 1850. Mount Sinai. The cheese fly. Inhabits most parts of the world.

Fam. PHYTOMYZIDÆ.—Gen. PHYTOMYZA, *Fall.*

92. *P. obscurella? Fall. Phyt.* 4, 8. Cairo. Inhabits Europe.

Fam. HIPPOBOSCIDÆ.—Gen. HIPPOBOSCA, *Linn.*

93. *H. camelina*, Leach. Eprob. Ins. 10, pl. 27, f. 11. Hardly distinct from H. equina. Hor Tamanib. Tajura. Wâdy Gharandel. Wâdy Hebran. Mount Sinai.

FRANCIS WALKER.

Entomological Notes, Captures, &c.

Nemeobius Lucina near Wetherby.—I took six specimens of Nemeobius Lucina at Bramham Park, near here, yesterday. I used to take it abundantly at Crabbe, near Winchester; but this is, I believe, almost the only locality in Yorkshire. I knew they only came out on Monday, and yet the very first day they were preparing for next year's brood. Last night, May 30, moths were more numerous than I have yet seen them.—*J. S. Wesley; Wetherby, Tadcaster, May* 23, 1871.

Papilio Machaon at Dawsmere.—A fine imago of the Papilio Machaon was captured at Dawsmere, near Long Sutton, one day last week, by a labouring man. I am not aware of it being taken in East Lincolnshire before.—*W. H. Brooks; Long Sutton, Lincolnshire, June* 1, 1871.

The Migration of Aphides.—There is a peculiar form of atmospheric dullness, which, if not confined to the vicinity of our metropolis, is more frequent there than elsewhere, and which is popularly designated a "blight in the air," and is supposed, in some way, to have an injurious effect upon animals, and certainly upon vegetation. Inquire the reason of the latter circumstance, and very likely you will be informed that this blight is caused by the travelling of a host of insects from one spot to another; and some persons are under the impression that they do not journey voluntarily, but are sucked up by the clouds in one spot, and deposited by them in another, without any apparent reason. There is no report, it has been said, so false as not to have in it a grain, at least, of truth; and we know that various species of insects do migrate at certain times, and especially those belonging to the genus Aphis, pre-eminently entitled to the definite article in connexion with the name of "blight." Passing through some of the yet remaining lanes, which intersect the market-gardens at Brompton (Middlesex), on May 15, at 11 A.M. and again at 1 P.M., I observed a number of aphides on the wing, and moving, as far as I could judge, nearly in the same direction. There was scarcely any breeze stirring, but seemingly the insects were coming with the wind, and the sky was dull and cloudy with a bronzy hue, nearly corresponding to what is called by the uneducated a "blight." It would seem, therefore, that such states of weather are selected, in some instances, by insects, when they are journeying in search of fresh quarters; and after or during these, having reached their destination, they may be found busily engaged in attacking the produce of the flower- or kitchen-garden, giving some colour to the popular notion that the atmospheric gloom is caused by approaching or receding insects.—*J. R. S. Clifford.*

[Mr. Walker will, perhaps, kindly offer some explanation of the phenomenon in question.—*Edward Newman.*]

Ravages of the Larva of the Currant Moth.—The larva of this variable and ubiquitous species has been very plentiful this season in gardens west of the metropolis, corroborating the statement that a cold winter is less unfavourable to hybernating larvæ than those wherein there are frequent intervals of mild weather and a considerable rainfall. Awaking from their winter torpidity rather later than usual, they seemed, in my own garden, to devote themselves particularly to the task of stripping the gooseberry bushes, neglecting those of the currant; and not only the leaves disappeared, but also most of the blossoms. The supply of food there being exhausted, after the last ecdysis, the multitude moved off towards a solitary black-currant bush, which stood alone at the edge of the cluster of gooseberry bushes. At a short distance there were a number of red-currant bushes, yet only a straggler or two reached these; for this larva is remarkably sluggish in its habits, and decidedly objects to undertake a journey if food can be got otherwise. So, on this luckless bush, the swarm settled down, for to it, in the poet's words,—

> "they rolled in heaps, and up the tree
> Climbing, sat thicker than the snaky locks
> That curled Megæra."

Left undisturbed, by way of experiment, they swept off leaves, buds, blossoms, and finally devoured the bark and even the wood of the young twigs. It was only when this bush was nearly bare that the larvæ began to file off towards other bushes; and a process of hand-picking, at this crisis, resulted speedily in the destruction of several hundreds. It was noticeable, however, that in some other places, as, for instance, at Clapham, in Surrey, only a few miles off, there were rather fewer than usual of grossulariata about.—*J. R. S. Clifford.*

Description of the Larva of Eupithecia irriguata.—Long, slender, and tapering slightly towards the head; ground colour dull yellowish green; skin rather rough and wrinkled; central dorsal line dull rusty red, very indistinct, except on the capital and caudal segments, enlarged on the centre of the median dorsal segments into a somewhat conspicuous elliptic blotch; subdorsal and spiracular lines yellowish, the latter very faint; head rusty red; belly greenish, without markings. Feeds on oak; full fed middle of June. Much resembles the larva of E. exiguata and consignata, being exactly intermediate between the two. I am indebted to the kindness of Mrs. Hutchinson, of Grantsfield, and Mr. Buckler, of Emsworth, for the opportunity of describing this almost unknown larva. It was bred from the egg by this most indefatigable of fair entomologists; and Mr. B. has, with his usual skill, secured a life-like figure. A few years since my friend Mr. Wratislaw, of Bury St. Edmunds, bred several perfect specimens of this beautiful pug from larvæ beaten from oak, at Hunstanton, in Norfolk.—*H. Harpur Crewe; The Rectory, Drayton-Beauchamp, Tring, June* 19, 1871.

Acronycta Alni at Birmingham.—On the 31st of July, last year, my brother had the good fortune to take the larva of A. Alni. A friend of ours, Mr. W. R. Shrosbree, gave us instructions how to rear it: we nailed a piece of peat on the back of the breeding-box, into which it made up on the 6th of August, 1870, from which it emerged on the 18th of this month, a most beautiful and perfect insect.—*John Landon;* 31, *Alston Street, Lady Grove, Birmingham, June* 20, 1871.

Macroglossa Bombyliformis and Cucullia Umbratica at Inverurie.—There was a specimen of Macroglossa Bombyliformis and one of Cucullia umbratica, found here last week. So far as I am aware they are both new to the Aberdeenshire list.—*James Garrow;* 40, *Market Place, Inverurie, N. B., June* 19, 1871.

Extracts from the Proceedings of the Entomological Society, June 5, 1871.

Shower of Insects at Bath.—The Secretary read the following letter (dated May 9th), received from the Rev. L. Jenyns, of Bath, concerning the newspaper reports, alluded to at the last Meeting, as to the supposed showers of insects, or other organisms, occurring at that city:—"Seeing in the 'Athenæum' that mention was made at the last Meeting of the Entomological Society of a 'so-called storm of insects' that had fallen lately at Bath on two occasions, with reference to the inaccuracy of newspaper reports in scientific matters, I venture to send, for the information of the Members of the Society, a statement of so much as I know respecting the phenomenon in question. I did not witness it, indeed I was not in Bath at the time; but a person who keeps a small inn near the Midland Railway-station, where the phenomenon was observed, on my requesting to see them, showed me some of the organisms still alive, which he had kept in a tumbler of water since the time of their falling. This was several days after the occurrence of the storm, and, having already parted with a great many specimens, he would not allow me to take one away with me for closer examination at home. But I saw enough to satisfy me as to their nature, if not to identify the exact species. They were not, as may be supposed, true insects, nor were they Entomostraca, as Prof. Westwood thought they might perhaps have been, but forms of Infusoria, more especially of the genus Vibrio, large numbers of which were present, some swimming freely in the water, but the greater part congregated in spherical masses about the size of a small marble, each mass being surrounded by a semitransparent filmy sort of skin or envelope, through which the minute worms might be readily discerned with a pocket-lens, tangled together and in a nearly quiescent state. I believe them to have been the Vibrio undula of Müller ('Animalcula Infusoria,' p. 46, tab. vi. figs. 4—6, 1785), or some very closely-allied species; and his figure gives an exact representation of the appearance of the congregated masses of worms as presented in this instance, this habit being characteristic of the species. He speaks of the masses being sometimes collected round the branchlets of a conferva (as given in one of his figures). The surrounding skin, which I have alluded to above, I suspect to have been nothing more than a pellicle of scum, &c., deposited from stagnant water, perhaps rendered thick by evaporation. I was told there had been a sudden squall of wind before there came on a heavy rain, and my idea is that these organisms must have been lifted up by the force of the wind, acting in a gyratory manner, from some shallow pool in the neighbourhood, reduced perhaps to a little more than a large puddle, in the centre of which, from the drying up of the water around, the organisms had collected. A boy at the station first noticed them (*i.e.* the above spherical masses) falling on his coat, &c., as the rain came on, and shortly after, as the rain fell more heavily, the platform, so much as was not under shelter,—so I was told,—was covered with them. A few had been observed during a storm some days previous to the fall of which the above is an account."

[Of course, after giving this subject so careful an investigation as I have done, with a different result, I cannot accept Mr. Jenyns' solution, but adhere in all respects to the opinion I have expressed (Entom. 312, No. 91).—*Edward Newman.*]

Rare Hymenoptera at Glanville's Wootton.—Mr. F. Smith exhibited three rare British Hymenopterous insects sent to him by Mr. J. C. Dale, of Glanville's Wootton, in which neighbourhood they had been captured. They were Myrmecomorphus rufescens (a remarkable species of Proctotrupidæ), Ichneumon glaucopterus and Osmia pilicornis.

THE ENTOMOLOGIST.

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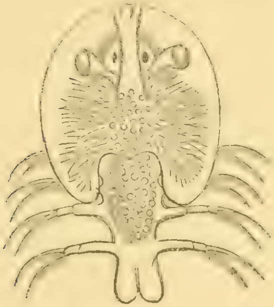
Answers to Correspondents.



ARGULUS FOLIACEUS (MAGNIFIED).

Argulus foliaceus.—The animal J. R. has sent and described is Argulus foliaceus: it is an apterous aquatic insect of the division Entomostraca, which is composed of exosteate animals, which have eyes imbedded in the carapace, and not placed on a peduncle, as in crabs and lobsters. The Argulus attaches itself to fishes by means of two sucking-disks, which adhere so tightly to the fish that it is often difficult to remove them alive. When firmly attached the Argulus sucks the blood of the fish by means of a sharp-pointed rostrum or proboscis: this has been called a siphon, and the animals which possess it Siphonoptera, both rather fanciful appellations. The female carries a large bag of eggs, apparently in the thorax, and the carapace, or cephalothorax, is so transparent, that this ovary and its contents can be seen through it. I have never met with a male. The figure, which I have traced from Baird's 'Cyclopædia of Natural Sciences,' represents a female, with the ovary full of eggs: these eggs are deposited on the leaves of water-plants, particularly those of genus Potomogeton, and the young, on escaping, swim freely in the water, probably feeding on minute animalcules. Be this as it may, it has been ascertained by some of the most indefatigable observers, that they do not acquire sucking-disks and their parasitic economy until after the sixth moult.

Beetle destroying Ten-weeks' Stock.—Can you suggest a remedy under the following circumstances:—My ten-weeks' stock came up regularly and grew very well until three weeks back, when it was coming into blossom; it was then suddenly attacked by myriads of a little jumping beetle, some of which I have secured and send for you to examine. All chance of blossom seems gone; the leaves, as well as the flowers, being eaten by this miserable little wretch, which is no bigger than a flea. I have killed thousands, by shaking the stock over a shallow basin of hot water, in which they die instantly and float on the surface; but more remain behind, and the cry is still "they come."—*E. E. N.*

The beetles were immediately dispatched to Dr. Power, who thus courteously replies to my request for a name:—"The Haltica is Phyllotreta pœcilocerus, of Waterhouse's Catalogue; obscurella, *Ill.*, of Crotch: it is very common everywhere.—*J. A. Power.*" The ten-weeks' stock (Cheiranthus annuus) is a native of the South of Europe, and was introduced as a garden annual one hundred and forty years ago. There is no plant more familiar, and none more universally cultivated. In the South of England it is difficult to find a cottage-garden which is not decorated with the bright flowers of this favourite. The Phyllotreta is a native of this country, like the turnip Haltica, or "turnip-fly," as it is very erroneously called; but it would remain unnoticed, did we not provide it with a more agreeable esculent than it finds in the hedge-rows.

Entomologists in France.—On the wrapper of the July 'Entomologist' I gave the following scraps of news received from France, too late for insertion in due order; they are all extracted from the 'Petites Nouvelles Entomologiques:'—"The second siege, by which Paris has suffered so much, has spared the persons of entomologists, but has utterly annihilated, or greatly damaged, many of their collections and libraries. Dr. Laboulbène, who resided in the rue du Bac, had a part of his house caught by the flames, and a great part of his library destroyed. M. Boulard's collection was shattered to atoms by shells; and many collections have suffered great injury from the partial explosion of the Luxembourg powder-mills: happily a tenth part only of the powder exploded. Had the project of exploding the whole been successful, the collection in the Museum itself must have been destroyed. M. de Marseul's collection is uninjured. Almost all the provincial entomologists in France are in safety, and eagerly pursuing their favourite study,—a solace in their troubles. At Strasbourg the fine collection of M. Gauber is safe, and likewise those of MM. Koechlin and Zuber-Hofer at Dornach; while that of M. Guenée, at Chateaudun, has entirely escaped the destruction of the town by the Prussians, who have taken both the collections and the books of M. Estienne, from the same town."

Collecting in the Holy Land.—M. Peyron speaks of having collected some interesting beetles in an excursion to St. Jean d'Acre and Nazareth: amongst them the most noteworthy were—a Carabus, similar in appearance to Cymindis humeralis, with red body and blue elytra, having a broad sutural stripe of red; it may be a species of Calleida, or something near that genus: a Heteromeron, at least equal to Hylecœtus dermestoides in size, and which seems to be one of the Rhipiphoridæ; it is dull black, with a red prothorax, and it has laminate antennæ, the branches being very long: a Clerus or Dasytes, entirely green, and with a very foreign appearance: a single specimen of Oxysoma Schaumii: two of Agrypnus judaicus: a single specimen of Elytrodon Chevrolatii: one of Adoretus: several of Meloë, Onitis Ezechias, and many minute beetles.

Collecting in the Pyrenees.—M. René Oberthur is now collecting in the Pyrenees, accompanied by Michel Nou, the celebrated entomological guide of Vernet-des-Bains: he has collected many rare insects, and some that he believes new.

Collecting in the Caves of Ariège.—Meunier, the blacksmith, at Ussat, is strongly recommended as a guide to all entomologists who propose exploring the caves of Ariège: he has already accompanied Linders, Von Bruck, Dieck, &c.; and is thoroughly acquainted with all the good localities in the neighbourhood.

Entomological Society of Belgium.—M. Weyers has resigned his Secretaryship of this Society, which has experienced great difficulty in finding a successor to one whose courtesy was so remarkable. He is succeeded by M. de Borre, who may be addressed at No. 1, Place du Musée, Brussels.

Phylloxera coccinea.—This strange insect, which I found so abundant on oak at Leominster, in August, 1869, and concerning which Mr. Walker supplied a most interesting note (Entom. iv. 316), has appeared in numerous different localities in France. MM. Planchon and Litchtenstein continue to study its economy, but hitherto without having discovered anything new. We are still in ignorance of the male.

Migration of Aphides.—In reference to Mr. Clifford's remarks on this subject in the July number (Entom. 346), Mr. Walker has obligingly sent me the following note:—"I believe that the migrations of Aphides are very short, and that the change in the atmosphere, of which the gloom called a blight is the result, is the cause directly, and by its effects on vegetation, of hastening the appearance and of increasing the number of the winged Aphides. When the Aphides have for food a plentiful supply of sap they generally continue in the wingless state, and multiply most rapidly: such is the case with the Aphides of water-plants, of the elder, and of the bean. When the atmosphere checks the supply the winged state begins to abound, and is preceded by the warm dull air that occurs periodically. The winged Aphides of the elder may be observed to be more frequent in the clusters beneath the leaves, than in the clusters on the larger shoots, where the supply of sap is more abundant. In the autumn the atmosphere, also, is the cause of the second especial appearance of the winged Aphides, which fill the air in the calm cloudless days at the end of September and in the beginning of October. It was remarked more than half a century ago, that the autumnal change in the temperature, and its effect on vegetation, is the cause of the appearance of the final state of Aphides; and these insects have been kept four years successively in a green-house, without any appearance of the final state; and I have seen, during a continuous mild winter, the Aphis of the nettle still viviparous, and not oviparous. There are some Aphides, of which all the individuals are winged till late in the autumn, and which do not migrate; of these is the Aphis of the sycamore (A. platanoides), which sometimes occurs in immense swarms on the south coast of England, and is partly kept in bounds by a proportionate number of Syrphi, of whose larvæ it is the chief food. This year is an especial epoch of the plum-tree Aphis (A. Pruni), and its overplus population has colonized the apple-tree and the cherry-tree; an unusual occurrence."

Does Thecla Quercus ever remain in the Pupa state for a Year?—To-day I found a male T. Quercus in one of my larva-cages. I have not taken a single larva of the species this year, and I have not dug for pupa for some months; so how it got there I do not know, unless it has remained in the pupa since last year, as then I had a number of the larvæ. Is this a usual thing?—*W. H. Cole; Croxton, Thetford, Norfolk, July* 9, 1871.

I regret my inability to answer this.

Colias Europome.—If, in any future edition of your 'British Butterflies,' you should care to figure Colias Europome, I shall be very happy to lend you, for that purpose, a fine specimen in my possession, taken with, I believe, three others, by a local collector at Horsham.—[*Rev.*] *Windsor Hambrough; Clarendon House, Worthing.*

I shall be much obliged for the loan of the specimen, whenever it can be sent by a safe hand. I have never known of any authentic British one.

The New Moth-trap.—A short time ago there was some correspondence in the 'Entomologist' about the *American* moth-trap, which does not seem to be considered of any use. I shall be very much obliged if you can give me any information about the *new* moth-trap, without the aid of light. Does it answer? I think that it would be preferable to the American moth-trap, but should like to have the opinion of some one who has used it.—*W. H. Cole; Croxton, Thetford, Norfolk.*

I do not know the new moth-trap.

Triphæna Curtisii.—Mr. Nicholas Cooke, of Liverpool, has bred several T. Curtisii: his larvæ did not assume the pupa until towards spring, but still much earlier than T. Orbona.

Carding Beetles.—In carding large or moderately-sized beetles, how do you manage to keep the antennæ stretched out?—*I. W.*

I have either allowed them to take their course as when pinned and leave them unsupported, or have gummed them to the card-board. I do not think either plan good; and shall be obliged if Dr. Power, or some other competent authority, will advise.

Worms infesting the Larvæ of Liparis chrysorrhœa.—Can you inform me, through your 'Entomologist,' of the name of the inclosed worms, which have been killed in spirits of wine. I have a large brood of L. chrysorrhœa, and a great many of them seem to have been attacked by this parasite, which I find from time to time in my breeding-cage, they having crawled out of some of the caterpillars, which lie near, in a shrivelled state. I shall be much obliged for any information, as I have never met with this insect before, nor can I think to what it is likely to turn.—*Byron Noel; Findon, Worthing, June* 6, 1871.

The worm is a Filaria, but I am unable to state the species. The occurrence of this worm in Lepidoptera is not uncommon; but it is much more frequent in the Coleopterous genus Feronia. I have frequently seen specimens, three and four inches in length, protruding from the extremity of the body in Feronia madida. The Filaria sent is in its adult state, and undergoes no farther metamorphosis.

Larva of a Sawfly.—I have now in my breeding-cage a very strange caterpillar, such as I have never seen before. I took it a fortnight since feeding on whitethorn: it is a pale green colour, frosted all over with white or very pale green; it always rests coiled up at the back of the leaf. What is it? —*Stephen Clogg.*

The larva of Tenthredo Cratægi, the Tenthredo sylvatica, Tenthredo Lucorum, Cimbex Lucorum, Trichiosoma sylvaticum, &c., &c., of various authors. There are hundreds on each hawthorn hedge in my neighbourhood: it will be described under the name of Tenthredo Cratægi in my collected notes on these insects.

Agamogenesis in Sphinx Ligustri.—Whether the following fact concerning the Sphinx Ligustri is new or not I cannot say; it appears so strange to me that I think it worth sending to you. This year I have bred a female S. Ligustri, and not wanting her as a specimen I allowed her to remain in the breeding-cage for some days, during which she laid many eggs on the net covering the cage. I thought, of course, that they would be unfruitful; but, much to my surprise, after a time young caterpillars began to make their appearance; and although the eggs were all laid during one night, they continued to emerge from the 2nd to the 6th of July. I have now nearly fifty of them; they have grown already to nearly three times their size when they were born. Being certain that a male was never near the female that produced the eggs, I am quite at a loss to know how and when the eggs could have been fertilized; in fact I am perfectly puzzled to account for it in any way. If you are in want of any of the larvæ send a box, and you shall have them.—*Stephen Clogg; East Looe, July* 12, 1871.

In the first line of p. 12 of my 'Essay on the Employment of Physiological Characters,' in classification, I have noticed that a similar fact to that mentioned by Mr. Clogg has already been recorded. In addition to Sphinx Ligustri I have enumerated twenty-five well-known Lepidoptera, in which perfect agamogenesis has been observed. I am much obliged for the offer of specimens, but shall be still more so if Mr. Clogg will himself continue to observe them, and report the result.

Egg Parasite.—The inclosed letter will explain the nature of the (to me) remarkable curiosity contained in the quill. Can you tell me the name of the parasite? I shall feel obliged if, in the next number of the 'Entomologist,' you will record this, with any remarks of your own. No such case has ever occurred to me.—"Having just read the 'Insect-Hunter's Companion,' and seeing that at p. 41 you say that you have heard of eggs being stung, I send you an example. I found the inclosed egg on poplar, about June 20th; and to-day, at five minutes to 2 P.M., I happened to look at it, and observed a very small hole in it. This I hoped would prove to be the caterpillar; but, to my disgust, in about three minutes a small insect emerged, and a few minutes after another; one or two are in the quill with the egg, I believe. If you could kindly tell me what sort of egg it *was* when laid, I shall be much obliged. Last year I found a good many kitten (furcula) and poplar hawk (Populi) eggs on this same tree."—The name of my young correspondent is H. A. Bull.—*J. Greene; Apsley Road, July* 10, 1871.

As these insect-atoms were very lively and active, it is probable that many escaped before they reached my hands, when they were only nineteen in number; and these, having been examined by Mr. Walker, are pronounced to be hymenopterous egg-parasites, the Trichogramma evanescens of Westwood. The egg in which they had passed their larval existence was that of Smerinthus Populi.

EDWARD NEWMAN.

Life-history of Acidalia prataria.—The parent moth was taken by Mr. J. P. Barrett, at Folkestone, during the third week in July, 1870; and the eggs were laid in a pocket collecting-box a day or two afterwards. The young larvæ emerged early in August; they were exceedingly long and slender, and were very active until the end of October; they were then placed in a large box with a quantity of withered Polygonum aviculare (common knot-grass), to which they attached themselves; some of them remained motionless until the end of March, others crawled about for a short time among the Polygonum: in neither instance could Mr. Barrett discover that they ate anything during the winter. Early in April they began to feed again, and continued eating until the middle of June, when they were full fed. Mr. Barrett remarked that at the time of hybernation they varied greatly in the number of black spots, hereinafter to be described. The full-fed larva rests in a perfectly straight position, the head being porrected on the same plane as the body, but falls from its food-plant if annoyed, and lies wriggling and twisting on the ground in a most remarkable manner. The head is of nearly equal width with the second segment; the face is flat, truncate at the mouth, and at each extremity of the truncature is a conspicuous papilliform antenna, with a somewhat bulbous base; the body is long and slender, of nearly uniform breadth throughout, but slightly and very regularly increasing in breadth from (and including) the head to the anal extremity; the sides are dilated by the presence of a manifest skinfold, which extends its entire length; the back is transversely wrinkled or divided into numerous sections; the number must, however, be taken as subject to future investigation, as I have only counted the sections in four segments and in two specimens; the legs are crowded together, and when the larva is annoyed it bends the head downwards until the mouth and legs come in contact, the flattened character of the face entirely disappears, the anterior extremity appears truncate, and the legs are concealed by their close approximation to the body; the ventral claspers are only two, and there is no trace of the other pairs; the anal claspers are rather slender and spreading; the ventral surface is wrinkled like the dorsal, but the sections are narrower, thus allowing free play to the movements of the body in crawling; scattered bristle-like hairs occur on the head and on various parts of the body: the colour is pale putty-colour, the lateral skinfold rather lighter, and the ventral surface rather darker, inclining in one specimen to smoky; in each dorsal interspace, beginning with the sixth and ending with the tenth, are two closely approximate and nearly square black spots; in advance of these and rather nearer the head there is another black spot on each side of each segment; and again on each segment, still in advance of these markings, is a transverse series of four other linear indistinct black markings. These larvæ were full fed on the 18th of June, when they left the food, and descending just below the surface of some light earth provided for them, they spun a very slight web, composed of a few silken threads attached to particles of earth, and in this changed to pupæ on the 25th; the colour of the pupæ was bright light-brown, and the surface exceedingly glabrous; the head rounded; the wing-cases ample, extending two-thirds of the entire length; the anal segment produced into a nipple, and furnished at its extremity with two spines directed backwards; these are parallel at first, but each is bent outwards at its extremity. I am indebted to the kindness of Mr. Barrett for a supply of these interesting larvæ, and for particulars of their early life-history. With me they fed exclusively on Clematis vitalba (traveller's joy). This is the Geometra strigillata of the 'Vienna Catalogue,' but not of Hübner, whose insect still retains that name. It is erroneously stated in 'British Moths,' that the food-plant of this species is Stachys sylvatica (hedge wound-wort), an error copied from Freyer, and a humiliating instance of the folly of copying without acknowledgment.—*Edward Newman.*

Description of the Larva of Acidalia remutata.—Eggs were obtained from a specimen of this insect, I captured on June 15th, 1870: these were red in colour, and hatched on the 27th of the same month. By August 9th the larvæ had attained to an inch in length, when I described them as follows:—Body rather rough to the touch, slender, uniformly cylindrical, and of nearly uniform thickness throughout; head the same width as the second segment, and notched on the crown; the face flat; skin finely ribbed transversely, both dorsally and ventrally; segmental divisions not very conspicuous; ground colour dark olive-brown, approaching to dull black ventrally; head light brown, variegated with darker, and with a black V-shaped mark, the apex of which is pointed upwards, on the upper part of the face; the medio-dorsal stripe is composed of a very narrow, interrupted and indistinct grayish line; there are no perceptible subdorsal lines, but along the spiracles are several grayish white marks, which are most conspicuous on the posterior segments; on the eleventh segment, at each side, between the medio-dorsal and spiracular line, is a black spot; usual dots minute, black; a slaty gray stripe extends along the centre of the belly, gradually shading off into the blackish ground colour. My larvæ fed on Polygonum aviculare, and, when at rest, the food-plant was grasped by the claspers, and the body stretched out at full length, with the head raised a considerable height; when disturbed they fell to the ground at full length rigidly stiff, not attempting to roll into a ring.—*Geo. T. Porritt; Huddersfield, July* 12, 1871.

Entomological Notes, Captures, &c.

Entomology in Ireland.—Having recently returned from a five-weeks' journey through the West, North-west and South-west of Ireland, a little account of what I did, and what I thought of Entomology in that country, might not, perhaps, be uninteresting to some of your readers. In the first place, I must say *I did not* work very hard at insects, my attention being divided between insect-hunting, fishing, scenery and gaining health, and the weather all the time being very unfavourable, nothing but dry north-east or north-west winds prevailing from the 4th of May, on my arrival in Dublin, till the 6th of June, the day I left Kingston for Holyhead on my return, and with very little rain,—I only required to use my umbrella twice the whole time,—which, they tell me, is something unusual for Ireland, which is considered the Niobe of nations. *Insects*—as a rule, in Ireland—appeared to me to be very scarce, except, perhaps, the Diptera; but I was much struck with the great numbers of M. Cardamines flying all along, on sunny days, the banks of the railways and the roads throughout the whole of Ireland which I visited; it was certainly the most abundant butterfly; next, R. Rhamni, hybernated specimens; then the small tortoiseshell (V. Urticæ) and peacock (V. Io) frequently put in an appearance; and two species of the common Pontias and P. Alexis and T. Rubi were abundant near Killarney: and this completes the list of butterflies which came in my way. In marshy places, near the Middle and also the Upper Lake, E. Bankiana was very common, flying over the heath with a common species of Crambus, but, strange to say, I did not fall in with Uncana; but I was very pleased to meet with parties who saw *alive* several specimens of Notodonta bicolora, or Micholora as they call it, there taken by the late Peter Bouchard; and I was pointed out a birch tree, where he found a specimen at rest on the trunk. I was too early myself for this insect; but I spent a day in the plantations, where they were taken, and found it very hard work, not being at the time very well. I dont see any reason why this insect should not occur again there, if any good collector could spend a few weeks on the spot, and is not afraid of hard work and getting wet feet in the swampy boggy places where it occurs. *Coleoptera* were generally very scarce and, what I met with, nearly all very common. I annex a list of the species found, kindly determined by Dr. Power, with their localities; those from Ballina occurred mostly in Sir Arthur Gore's park, about a mile from the town; they were principally taken on the 20th May. From this place I went on to Killaloe on the Shannon, and about six miles from there—on the banks of Lough Derg, on the left side, in a marshy place, on the 29th May—I found six specimens of Chlænius holosericeus running in the sunshine; this is the only really rare species I met with in Ireland: it has not, I believe, been taken for about thirty-five years, when a few specimens were then found in the fens of Cambridge, by Dr. Power and others. From this place I proceeded to Killarney, where I collected a few hours only, and principally on the margins of the Middle and Upper Lake; but Phosphaga subrotundata was crawling on the dusty road. After staying three days at Killarney I proceeded to Rosbeigh, about sixteen miles: this place is near the sea-shore, and looked promising; but it was very disappointing, as will be seen by the list. Although Ireland is rich in some plants, I did not meet with the great variety that are to be found in the South of England and on our coast, which accounts for the limited number of species of insects. I have no doubt, however, any good collector visiting the places, and really working hard, would turn up many other species, and probably a few rarities amongst them.

About six miles from Killaloe, all from Lough Derg:—

Chlænius holosericeus, 6
Blethisa multipunctata, 2
Carabus arvensis, common
Chlænius nigricornis, common
Pterostichus nigrita, 2
Anchomenus lævis, common
„ marginatus, do.
„ mœstus, 2
„ versutus, 1
„ viduus, 1
„ albipes, common
Bembidium assimile, 1
„ bipunctatum
Donacia impressa, 4
„ thalassina, 1
Gryphidius Equiseti, 4
Alophus Vau
Notaris acridulus
Strophosomus Coryli
Sitones tibialis, 3
Rhinonchus subfasciatus, 2
Ceutorhynchus troglodytes
Gymnetron Beccabungæ, *var.* of Veronicæ
Bagous lutulentus, 3
Parnus prolifericornis, common
Telephorus rufus
Psylliodes Napi
„ exoletus
Galeruca lineola
Lema cyanella
Cercus flavilabris, 3
Georyssus pygmæus, 2
Laccobius minutus
Stenus plantaris, 4.

Killarney, nearly all on the borders of the Lakes:—

Leistrophorus murinus
Stenus Juno
Phosphuga subrotundata, 5
Corymbites tesselatus, 3
„ Quercus, 3
Aphodius prodromus
Anisodactylus binotatus
Pœcilus cupreus
Blethisa multipunctata, 4
Anchomenus viduus
„ lævis, common
Elaphrus cupreus, do.
Chlænius nigricornis, do.
Harpalus fulvipes
Stenolophus lateralis
Bembidium Doris, 2
Telephorus lituratus, 2
Donacia linearis
„ aquatica
Phyllopertha horticola
Cyabus fuliginosus
Cassida vibex, 3
Phædon Betulæ
Prasocuris marginellus
Otiorhynchus picipes
Notaris acridulus
Mecinus pyraster
Sphærula Lythri
Rhinonchus pericarpius
Pachyrhinus caniculatus
Psophagus Sysimbrii.

Rosbeigh-on-the-Sea:—

Pterostichus nigrita
Anisodactylus binotatus
Calathus mollis, 1
Anchomenus marginatus, 5, common
Notiophilus semistriatus, 2
Elaphrus riparius, common
Amara fulva
„ trivialis, black var.
Saprinus æneus, 2
Hister neglectus
Onthophagus nuchicornis, common
Philonthus politus
Xantholinus ochraceus
Coccinella varians
Philopodon gemminatus, very common on sand-hills
Mecinus pyrgaster
Otiorynchus sulcatus
Erirhinus Nereis
Cæliodes didymus
Ceuthorhynchus troglodytes
„ Roboris
„ sulcicollis
Sitones regentsteinensis
„ tibialis, 2
„ sulcicollis
Anisotoma calcarata
Lathridius lardarius.

Ballina:—

Agriotes obscurus
Hypolithus arvensis, 3
Corymbites quercus
Telephorus flavilabris
Coccinella 16-guttata
Cyphon pallida
Cassida obsoleta, 4
Cassida equestris
Prasocuris marginellus
Phædon tumidula, 2
Galeruca lineola, common
„ tenella
Phædon Raphani
Psylliodes exoleta, 2, common

Crepidodera pusilla
Apthona cærulea (Pseudacori), common on Iris
Apthona lutescens, 2, common
Cercus flavilabris, 4
Aphodius scybalarius
Donacia sericea, 5
Leiophlæus nubilus
Gryphidius Equiseti, common
Sciaphilus muricatus, 3
Barynotus Schönherri
Baridius T-album
Mecinus pyrgaster, 2
Hydronomus Alismatis
Cæliodes didymus
Ceutorhynchideus terminatus, 3
Ceuthorhynchus assimilis
Sitones griseus
„ tibialis, common
Phyllobius unicolor, 2
Polydrosus pterygomalis
Apion Ervi
„ violaceum, 2
„ humile, 2
Bembidium 2-punctatus, 3
Amara vulgaris
„ trivialis, 2
Calathus mollis
Anchomenus lævis, common
„ micans
Pogonus chalceus, *var.*
Philonthus politus
„ varians
„ ebeninus
Stenus plantaris, 4
„ declaratus
Omalina rivulara
Tachyporus ruficollis
„ obtusus, *var.* according to Sharp.

—*Samuel Stevens;* 28, *King Street, Covent Garden, July* 9, 1871.

Four days in Sherwood Forest.—I spent four days, from June 12th to 16th, in company with Mr. Porritt, of Huddersfield, in Sherwood Forest. We made Edwinstowe our headquarters, and, except when we were stopped by the rain, we spent the day-time in searching the trees and beating for larvæ, and the evening in sugaring. At the latter, however, we did scarcely anything. The weather was cold, and there seemed to be no Noctuæ about: all the four nights I do not think more than a dozen moths came to sugar, and, with the exception of one N. Saponariæ and one C. Porcellus, they were quite common things, such as A. exclamationis and G. trilinea. Larvæ hunting was more successful, as the following list will show. The great find, however, was a fine male S. Fagi, which was found, sitting on an oak tree, the first day, only just out: it is now in my possession. We were a little too early for imagos; T. punctulata was tolerably plentiful, but we did very badly for the season; everything seems to be late this year. The weather has been wet and cold; and I never remember a spring and early summer with so little sunshine. The following is our list, which Mr. Porritt has kindly made out:—

T. Quercus
C. Porcellus
H. Velleda
E. Jacobeæ
L. Auriflua
O. Pudibunda
O. Antiqua
H. Pennaria
P. Pilosaria
N. Hispidaria
A. Betularia
T. Biundularia
T. Punctulata
I. Lactearia
E. Punctaria
E. Pendularia
P. Petraria
A. Strigillaria
H. Defoliaria
C. Boreata
E. Decolorata
E. Pulchellata
E. Castigata
E. Vulgata
E. Exiguata
T. Obeliscata (variata)
M. Ocellata
C. Unidentaria
C. Corylata
E. Palumbaria
S. Fagi
C. Flavicornis
N. Saponariæ
T. Cruda
T. Miniosa
A. Aprilina
H. Thalassina
H. Contigua
A. Myrtilli
A. Pyramidea
E. Mi
H. Barbalis
H. Prasinana
&c., &c.

—[*Rev.*] *T. W. Daltrey.*

Saw-fly Captures.—During the past two seasons I have added the following species of saw-flies to my little collection:—

Tenthredo semicincta. Beaten out of Spanish chestnut. Shirley, Surrey.

T. scutellaris and T. microcephala. Taken by sweeping maple. Croydon.

T. cingulata. Captured whilst flying over whitethorn. Croydon.

T. Rapæ. By sweeping heather. Shirley, Surrey.

Macrophya neglecta. Flying about whitethorn. Addington, Surrey.

Selandria fuliginosa. Captured amongst mixed herbage. Addington, Surrey.

S. pallipes. At Addington, Surrey.

S. stramineipes. Plentiful amongst the common brake ferns in Epping Forest.

Crœsus septentrionalis. Amongst birch and alder.

Athalia annulata. Amongst whitethorn.

A. scapularis. Swept off heather on the Addington hills, Surrey.

Allantus viridis. Beaten out of hornbeam. Highgate Wood.

A. Colon. Amongst hornbeam. Bishop's Wood, Hampstead.

A. Fagi and scalaris. Bishop's Wood, Hampstead.

Cephus pygmæus. Two specimens: one at Addington, Surrey, amongst grass; the other taken off a wall in Cannon Street, London.

Hylotoma enodis. By sweeping in a field near Epping Forest.

H. ustulata. Captured in Scotland this season, by Mr. Eedle.

Nematus cinctus. By sweeping plants in a field near Epping Forest.

N. Capreæ. Taken by Mr. Eedle in Scotland.

Sciapteryx costalis. Scotland. By Mr. Eedle.

Dolerus æneus. By sweeping Centaurea nigra in a field near Epping Forest.

D. cinctus. Scotland. By Mr. Eedle.

Abia sericea. Captured in Scotland by Mr. Eedle.

Euura Gallæ (*Newman*). This species is a gall-feeder, and affects Vaccinium vitis-idæa (the cowberry), growing in Perthshire. In the month of June, 1869, Mr. Eedle sent me tenanted galls, from which I bred the perfect insects the following May. The species have been named by Mr. Newman.—*Charles Healy; 74, Napier Street, Hoxton, N.*

Acidalia circellata and Anticlea sinuata near Canterbury.—I took a good specimen of A. circellata in Blean Wood, at eleven o'clock at night, on Wednesday, 28th of June. I do not know if it has been taken anywhere else this year. I have also taken several sinuata in the same locality. I believe this is the first that has been found here.—*George Parry; Church Street, St. Paul's, Canterbury.*

Ypsipetes ruberata in Scotland.—I have bred twenty-two fine insects from pupæ found under moss and bark of willow (Salix alba), at Eaglesham, nine miles from Glasgow.—*James W. Peebles; 13, Brown Street, Glasgow.*

Dianthecia irregularis and Acidalia rubricata.—D. irregularis has turned out a complete failure: I have only one, and Rev. J. Mills only one, turned out of over one hundred caterpillars. A caterpillar of A. rubricata has just died full fed.—*A. H. Wratislaw; School Hall, Bury St. Edmunds, July* 4, 1871.

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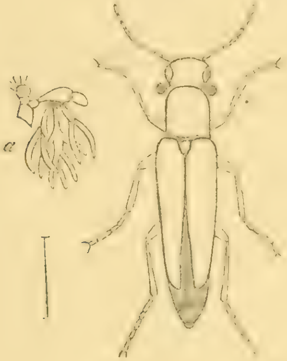
Answers to Correspondents.



LYMEXYLON NAVALE (MAGNIFIED).

Fig. *a* represents the palpus, and the line beneath this shows the exact length of the beetle.

Ship-timber Beetle (*Lymexylon navale*).—The information required by Mr. H. Bayne is rather of a multifarious character, but I shall have much pleasure in giving as much as I am able. The destroyers, or perforators, are of three very distinct and dissimilar kinds:—*first*, Lymexylon navale, a coleopteron, or beetle, in the larva state; *second*, Limnoria terebrans, a crustacean of the legion Edriophthalma; and *third*, Teredo navalis, a mollusk of the family Pholadidæ. Lymexylon navale, represented in the figure, appears to have been a most excruciating animal to our systematists; together with another beetle, of similar economy, it constituted the tribe Xytotrogi of Latreille, and the family Lymexylontidæ of Stephens. Lymexylon navale having done great injury to timber in the dockyards of Sweden, the king directed Linneus to investigate the subject and report: he did so, and his account of its economy is the first we have. Ratzebourg has, however, given us a much more complete life-history in his 'Forst-Insecten Kafer,' in which work he has figured the insect in all its stages. It has sometimes been most abundant in the dockyards of France, perforating the oak-timber and reducing it to powder. It has been found that in all stages this pest can be destroyed by immersing the timber in water. In the oak forests of Northern Europe it abounds; but in England it is go great a rarity, that a single specimen, taken in Windsor Forest, was esteemed a great treasure. The second insect is a marine wood-louse of very small size, but of great destructive powers: its food consists exclusively of timber, for, on examining the contents of its stomach, these have been found to consist entirely of comminuted wood. Unlike Lymexylon, which is killed by immersion in water, Limnoria only feeds on timber that is either partially or entirely submerged. Mr. Coldstream has collected a vast number of facts respecting this creature, and has published them in the 'Edinburgh New Philosophical Journal' for 1834. From this it appears that it commences its ravages on a piece of wood by excavating the soft parts, leaving those harder parts which mark the boundaries of annual growth, and subsequently attacks these, the portion consumed being under water, or, at any rate, below high-water mark. During the building of the Bell-Rock lighthouse it was necessary to erect a temporary wooden building, in which the engineer and his assistants resided, and which was supported by twelve large beams of Memel fir, fixed in bolt-holes cut in the rock; the sides of these beams were charred and pitched, but the bottoms, which closely fitted to the holes, were left naked. In the second year the edges of these timbers were in a state of decay, owing to the borings of the Limnoria. The logs of Norwegian pine, laid down to support the temporary tramroads, were greatly injured; the timbers at first ten inches square, in four years were reduced to seven inches, thus losing at the rate of nearly an inch a year. In some instances the house timbers were so completely eaten away at the bottom that they stood clear of the rock, supported only by the bolts and stanchions. The piles supporting the timber-bridge at Montrose were so destroyed by the boring of the Limnoria that the whole structure was in danger of falling; and, in like manner, the piles supporting the Trinity chain-pier, at Leith, were—in 1825, four years only after its erection—so perforated as to be useless, and were removed at a great expense, and replaced by new ones: the girth of the original timbers was forty-eight inches, which, before removal, was reduced to six inches. Various plans for remedying the mischief were tried, but none succeeded so well as covering the whole surface of the timber, from the bottom of the sea to within a foot or two of mean high-water mark, with broad-headed iron nails, technically called scupper nails, set close together. A piece of wood, covered on three of its sides with these nails, was found to have the whole interior eaten away, such portion of the exterior only being left as had been penetrated by the nails. This plan was adopted, at an expense of about £1000, in the Leith pier, which had cost £30,000; and, after four years, it was ascertained that none of the piles thus protected had been penetrated by the Limnoria. Timber used for partially-submerged structures is now generally kyanized, and this process greatly retards, if it does not totally prevent, the injury occasioned by this insect. The *third*, and most formidable timber-borer, is the Teredo, the character of which truly curious animal seems to have been as familiar to the ancients as to ourselves. Ovid compares this insidious enemy to the corroding effects of care on man,—

> "Estur ut occulta vitiata teredine navis;"

the simile is as good as the description of the Teredo is perfect. The interest in this mollusk has been kept up to the present hour, and it has been made the subject of three most elaborate and learned treatises in one year, 1833: they were by Pierre Massuet, Jean Rousset and Godfrey Sellius, the last of whom wrote a quarto volume of three hundred and sixty pages, and cites the labours of two hundred previous authors. Three years previously to the publication of this elaborate work, the Teredo threatened to submerge Holland, and hence the intense interest taken in its history. Holland seems to have been considered, at that period, a country standing on piles; and it is not astonishing that when the piles were found to be giving way a panic should have set in. It is rather remarkable that the three greatest historians of Teredo have been politicians, and not naturalists; and, although describing with accuracy and minuteness its structure and habits, had regarded it from a political rather than a zoological point of view. It may also be observed, that it is possible, indeed almost probable, that the little marine wood-borer already mentioned may have caused much of the damage attributed to the Teredo, for it was the piles that suffered most, and especially at or about the level of high-water mark. It has been supposed that Teredo, formerly abundant on English coasts, had become extinct; but this is evidently a mistake, for it seems certain that the destruction of the bridge at Teignmouth was effected solely by its operations. Teredo is a long worm-shaped and worm-coloured animal, with two very manifest shells attached to one extremity. Five species are recorded as British, and have received the names of navalis, malleolus, nana, norvagica and palmulata; but these, supposing them to be distinct species, are indifferently alluded to under the Linnean name of navalis. The mode in which Teredo perforates wood has been fully, and I may say exuberantly, but not conclusively, discussed. Some assert that it can bore through copper, and even iron; and I was once subpœnaed as a witness to prove this capability; but, not being cognizant of the existence of this power, I declined to express an opinion, and, therefore, was not called.

Argynnis Valezina at Canterbury.—I have taken several of this beautiful variety near Canterbury, and have seen several others during the past week; also some fine Adippe; both of which I have not taken here before.—*G. Parry; Church Street, St. Paul's, Canterbury.*

To me this is an interesting and unexpected discovery. I acknowledge I had heard of Valezina having been *seen* in Kent, but not *taken;* and I know we are so subject to errors of the imagination, that I have often taken leave to deduct one-half from the value of occurrences not verified by capture, on the principle that "a bird in the hand is worth two in the bush."

To set Hymenoptera.—I shall be much obliged if you will inform me, in the 'Entomologist,' how Hymenoptera are set; whether pinned or carded; and whether the wings are extended or allowed to remain along the back.—*S. T. C.; High Ham, Longport, Somerset, July* 20, 1871.

My own invariable practice is to pin Hymenoptera, and to set them with the wings expanded; but I do not collect those minute parasites of which Mr. Walker has described so many species; these are invariably gummed on cards. Mr. Walker brings them home alive in a phial, which has a piece of blotting-paper, or some similar material, in it, to absorb the moisture. Arrived at home the contents of the phial are shaken over a basin of hot water, which instantly kills them, and they float on the surface.

Small Specimens of Vanessa Urticæ.—I write to inform you that I have bred specimens of V. Urticæ from caterpillars, which I obtained in Wales, measuring only $1\frac{7}{16}$ths and $1\frac{5}{16}$ths inches respectively, from tip to tip of front wings. I bred some twelve specimens, varying from $1\frac{5}{16}$ths to $1\frac{3}{4}$ths, none exceeding the latter. I write to ask you if it is not unusually small, as I find, on referring, that the usual dimensions are 2 inches and over.—*Geo. W. Oldfield; Shrewsbury, July* 14, 1871.

The size is much below the average: a very small race exists in the Isle of Man, but not so small as these. Some entomologists have considered this a species; others have attributed the discrepancy to humidity of climate, insular situation, dryness of season, unusual heat, prevalence of cold east winds, &c.; but this small Manx race of Urticæ appears to be constant, which would not be the case were the size dependent on these conditions of atmosphere.

Chermes Abietis, gall of the Spruce fir.—I inclose a piece of fir, in which there seems to be a large amount of some sort of scale-insect; hundreds of the males have come out, but there are still a few, I think, in the box; the females seem to be under the hard lump. Could you let me know what they are? I noticed a great many on one tree.—*E. A. Hall; Southgate Hill, Winchester.*

The insects which form these curious and beautiful galls are Chermes Abietis of Linneus. Kaltenbach thinks there are two species, which he calls Chermes coccineus and C. viridis; but entomologists are not agreed on this. I propose to return to this interesting subject shortly, and to figure these galls.

Grapta C-Album bred in July.—During the second and third weeks of last month several larvæ of Grapta C-Album were found in our garden, feeding on gooseberry and red-currant. They were nearly full fed, and soon suspended themselves to the top of the breeding-cage, all being in chrysalis by the 20th. The first emerged from the chrysalis on the 27th; and at the present time only one remains to come out. Is not this very early for the appearance of this species in the perfect insect, or may we now consider it to be double-brooded?—*C. J. Watkins; King's Mills, Painswick, Gloucestershire, July* 18, 1871.

This is an interesting question, and requires careful consideration. I trust Mr. Watkins will keep a series of this brood, and inform the readers of the 'Entomologist' whether they resemble the pale or the dark variety.

Minute Moth.—Having taken a minute moth, much smaller than anything in Westwood's 'British Moths,' I think it well to send it you on the chance of its being rare. —*W. Seth Smith; Langley, near Guildford, July* 15, 1871.

I believe the little moth is Lithocolletis prunetella: it is certainly that or a closely-allied species.

Cocoon of a Curculio.—I shall be much obliged if you will inform me, through the medium of the 'Entomologist,' what this curious little thing is. It is, I fancy, the pupa-case of some Coleopterous insect.—*Wm. Douglas Robinson; Kirkennan, Dalbeattie, N.B., July* 17, 1871.

I have sent this curious little object to Dr. Power, who kindly returns the following note:—"The pupæ are dead, so I did not open the cocoons. I cannot tell what they are for certain. I think some Hypera (Phytonomus). If from the coast, *probably* H. fascicularis, judging from the shape of snout (tucked in) and structure of rudimentary elytra. The antennæ are under thin 'skin,' and, no doubt, would be modified when released, and look different; but as they now lie they look like those of Thaumaturgus, but I don't think it is. I *know* that Phytonomus does make such cocoons. They should be bred out before determining.—*John A. Power;* 52, *Burton Crescent, July* 22, 1871."

Name of a Larva.—Would you kindly inform me, through the 'Entomologist,' if you can from my description, what the under-mentioned larva is:—It is similar to one of the Vanessæ in general appearance; head very small and black; first four segments not much larger than the head, then increasing in size and tapering off again; the general colour is pale green, with a pale yellow line above the spiracles, which are black; in each segment there is the appearance of a black ring under the skin, so that if it changed skin again it would be black-ringed. I found it domiciled between two leaves of nettle.—*A. C. Hervey; Colmer Rectory, Alton, July* 23, 1871.

I think it is Pyrameis Atalanta.

Mould on Insects.—Can you kindly tell me what to do in the following fix? *viz.:*—I have a case of moths, many of which have become covered with a *white mould*, more particularly the antennæ and edges of the wings; I can remove this by brushing, or benzine will take it away for a short time, but it returns again, bad or worse than ever. Can you give me any idea of the cause, and if there is any remedy? The case is kept in a room where there is a fire daily, so that I do not think it proceeds from damp: many of the insects are valuable, and I am quite at a loss what to do.—*W. H. Pearson; Ivy Hall, Solihull, July* 25, 1871.

The insect in the condition described should be touched with a camel's-hair pencil dipped in a weak solution of corrosive sublimate in alcohol; after one or two applications the mould will certainly disappear, and is not likely to return.

Rearing Zeuzera from the Egg.—The other day I found a number of the leopard moth's eggs, which I wish to rear. I looked in your moth book, and found that the leopard caterpillars fed on solid wood. I should feel much obliged to you if you would tell me the most practicable method by which I could rear the caterpillars, for I have not got in my collection a single good specimen of the leopard moth.—*Cecil Brooks; 6, Kent Terrace, Regent's Park, July* 29, 1871.

I believe the attempt to rear Zeuzera Æsculi from the egg is almost sure to fail. The only mode I can suggest is to confine the moth, by means of a loose muslin covering, to the stem or branch of an apple-tree, and thus compel her to deposit her eggs on the bark: these will hatch in process of time, gnaw little holes in the bark, and feed for a year, at least, on the solid wood, as I have so fully described (Entom. ii. 92), remaining entirely out of sight until the final change to a moth takes place. It will be difficult, if not impossible, to exercise that care over the larvæ of Zeuzera which we do over the leaf-eating larvæ.

Parasite of the Tortoise.—Nothing is more common than to find a tick, about as large as a dog-tick, on a tortoise in a garden; sometimes as many as a dozen on a single tortoise. They attach themselves to the loose but very tough skin at the base of the legs of the tortoise. The scientific name is Ixodes Gervaisii. The name of Ixodes Testudinis has been given for this tick; but it is nowhere described by that specific name.

Parasitic Acarus on Crane-flies.—The minute mites attached to the crane-fly, which A. D. has sent, are the Ocypete rubra of Leach, described by that eminent entomologist in the eleventh volume of the 'Transactions of the Linnean Society.' Dr. Leach observes that "this little animal, which is not larger than a grain of sand, is parasitic, and is frequently to be found on the largest tipuladous insects adhering to their legs. No less than sixteen specimens have been obtained from one insect." He describes it as having "six legs; colour red; back with a few long hairs; the legs with many short hairs of a rufous ash-colour; eyes black-brown." I have frequently observed mites, which I presume to be of the same genus, clinging to the bodies of butterflies, Melanagria Galathea and Epinephele Janira more particularly. I shall be obliged for any further observations on this subject.

Bombyx processionea in Dorsetshire.—In 'Science Gossip' for August 1st I find the following paragraph:—"I beg to inform you that these caterpillars (Bombyx processionea) have made periodical visits to my garden for the last dozen or fourteen years. The first year they appeared we caused our servant to catch them; and, being all of us ignorant of their urticating nature, the boy suffered as your correspondent describes. Since that time we have destroyed many, but have taken care never to touch them. I have heard of clothes, dried near the trees on which the caterpillars were, becoming poisonous. The processionaries are very numerous, although I have never had the luck to see a procession. With us they devour oak, elm, hornbeam, and even laurel.—*Julia Colson; Swanage, Dorset.*" There are many things in this difficult to understand: not being a clothes-moth, I do not eat clothes, and, therefore, do not care for their becoming poisonous; but, in common with several brother entomologists in this town, I am desirous of knowing your opinion as to the possibility of Bombyx processionea occurring in Dorsetshire. —*Entomologistes.*

It is quite possible that Bombyx processionea should occur in Dorsetshire; but it is highly improbable that it should have paid periodical visits for twelve or fourteen years, and yet never before have come under notice: I, therefore, incline to think some other species is intended; probably Pygæra bucephala, Bombyx neustria, or Liparis chrysorrhœa. Mr. Dale, of Glanville's Wootton, one of the best entomologists living, must, I think, have been acquainted with so interesting and unexpected a fact as this singular caterpillar occurring periodically in his own country.

Galls on the Elm.—This morning I found the accompanying galls upon some elm-trees in our neighbourhood. Thinking they would interest you, I send them for your acceptance.—*Thomas Brown;* 13, *King's Parade, Cambridge, August* 8, 1871.

I am much obliged; they shall be named and described in the next number of the 'Entomologist.'

Food of Carpocapsa pomonana.—Is it common for C. pomonana to feed on other things beside apples and pears? I have bred a beautiful male specimen from a walnut, which was brought to me last September: it spun up in the nut, and changed to pupa last June. I took great care of it, keeping it in a little box by itself, in hopes it was something new: it is a very fine specimen, measuring 1 inch. —*W. West;* 6, *Green Lane, Greenwich, August* 10, 1871.

Migration of Aphides.—Allow me to thank Mr. Walker for his interesting note on the above subject (Entom. 354); and I think he has conclusively proved that the supposition I find current with some gardeners is erroneous, namely, that these insects travel in clouds for a considerable distance, as, for instance, from the country lying to the east of London into the western districts, so passing across the heart of the metropolis. We, in these suburbs, are apt to abuse the east as the source of much vapour and other atmospheric products, which take their rise in the extensive Thames marshes, and are floated to us by the easterly winds; but we may cease to blame Kent and Essex for the Aphides which plague us in Middlesex and Surrey. The Aphis of the plane seems to attack the lime also, many of these trees about London presenting quite a wintry aspect; but it is singular that some of those which have been visited by the greatest number of these pests, so as to lose nearly all their leaves, have put forth a fresh supply, and appear again in spring attire; while others, which have suffered less, retain their brown appearance.—*J. R. S. Clifford.*

Lacordaire's Coleoptera.—I learn from that agreeable source of entomological information, the 'Petite Nouvelles Entomologeques,' that M. Chapuis has undertaken to complete M. Lacordaire's great work, which was interrupted by the lamented death of its talented author. M. Chapuis wishes to obtain specimens of the following genera, in which he is still deficient:—Megamerus, Prionesthis, Rhynchostomis, Atalesis, Ametalla, Chiloxena, Polyoptilus, Macrolema, Eubaptus and Ateledera, &c. I am informed that our friend, Mr. J. S. Baly, who possesses the finest collection of Chrysomelidæ in the world, has offered it for M. Chapuis to make every use of; and I trust other entomologists will follow so generous an example.

M. Wencker.—M. Wencker has been confined to his bed by severe illness for ten months, during which time the bombardment of Mezières has taken place. His health is now improving, and he has resumed his entomological correspondence: he has fixed his residence at Viterne, and is about to explore, entomologically, the province of Lorraine. His collection is uninjured.

M. de la Brulerie.—M. de la Brulerie is about starting on an entomological tour in Spain.

M. René Oberthur.—M. René Oberthur has returned from his visit to the Pyrenees in company with Michel Nou, to whom we are indebted for so many and such interesting discoveries. After having rapidly explored the vicinity of Perpignon, the flats at Canet, and the pools of St. Nazaire, where he made a fine collection of Coleoptera, M. Oberthur returned to the Albères, and has brought from these mountains some very curious Coleoptera, among which is a Staphylinus he thinks may prove to be the Kraatzia attophila of Saulcy. I may also mention among his captures Anillus hypogæus, Microtyphlus Schaumii, Leptomastax Delarouzei, Catopsimorphus Fairmarii, Raymondia Delarouzei, and a species allied to this last, but much larger, and probably new to Science; and, in addition, he has brought home a considerable number of Pselaphidæ and Scydmænidæ, which have not yet been determined. On the Massane he met with Bythinus Massanæ of Saulcy, discovered a few years back by Michel Nou. A cave in the neighbourhood of Banyuls, never previously explored, and in which it was expected some of the blind Coleoptera would be found, produced nothing but Pristonychus cyanescens, and a pretty Catops which had taken up its quarters at some distance from the mouth of the cave. It is remarkable that in a country so rich in blind Coleoptera, this cave did not afford a habitation even to an Adelops. After searching the environs of Port-Vendres, Collioure and Banyuls, where he found a number of Aptinus displosor, nearly always accompanied by Percus patruelis, he proceeded to Vernet, where he made some most interesting captures, amongst which may be mentioned Belodera Genei, Vesperus Xatarti, Rhagonycha signata, Chlœnius fulgidicollis, and a great number of other species not yet determined. He next explored the environs of Mont-Louis, and especially the valley of Eyna, so rich in Coleoptera. Thence he returned to the Ariège, but only explored the cave at Ussat, which contained scarcely anything worth notice, excepting Adelops Pyrenæus and Pholeuon Querilhaci, which were very abundant. He ended his tour by exploring the mountains of Luchon, and ascended the peak of Nethou. The mountains of the Haute-Garonne produced a number of interesting Coleoptera, among which may be mentioned Athous filicornis, Nebria laticollis, and Adelops ovatus, shaken out of moss. When all the insects procured shall have been determined, it is proposed to prepare a list of them for publication in the 'Entomologist.'

M. de Narcillac.—M. de Narcillac communicates the results of an entomological excursion he has made to l'Etang-Neuf, the forest of Rambouillet, near Montfort-l'Amaury. This locality proved much richer than he had expected: he collected between seven and eight hundred Coleoptera, the greater part of which are still unnamed. Among the ascertained species are Cicindela sylvatica, found in sandy tracks bordered with heath, and the bark of Pinus sylvestris, stacked in heaps after the felling of the timber; Pogonocherus ovalis, on the sallows, after they began to lose their catkins in May; Lebia hœmorrhoidalis, on the catkins of the sallows, a single specimen on those of the birch, and another on fern; Chorœbus Rubi, and other Buprestidæ, on the catkins of the birch; Lamia tristis, Helops sulphureus, Bembidium paludosum, and a great number of Curculionidæ, Hydrophilidæ, and of the genera Agabus and Cryptocephalus.

M. l'Abbé Fettig.—M. l'Abbé Fettig, an entomologist, who, during the early part of the occupation of Alsace by the Prussians, had been imprisoned at Strasbourg, has been released. His collections have received no injury.

Phlœdes obcordata.—In a collection of insects, made in the east of Siberia, Mr. Pascoe has detected a specimen of the genus Phlœdes, closely allied to, if not identical with, the P. obcordata of Kirby (Nosoderma obcordata), a species hitherto supposed to be confined to the United States. This extension of the geographical range of the genus is very interesting.

New Books.—The 14th fasciculus of Mulsant's 'Opuscula Entomologica' is just published. The 3rd volume of the 'Natural History of the Hemiptera of France' will be ready in a few days, and will contain four tribes. M. Mulsant has published the new edition of his 'History of the Lamellicorns of France,' as well as the 1st part of the 'Staphylinidæ.' A new edition of the 'Iconography and Natural History of Larvæ of Lepidoptera,' by MM. Duponchel and Guenée, is about to be issued: the work gives descriptions and figures of a great number of the larvæ of European Lepidoptera, of course including English species; these figures are contained in ninety-three plates, excellently coloured: the work is published in forty fasciculi, at 1 franc each. Of the Iconography and Description of unpublished Lepidoptera of Europe, by P. Millière, twenty-five fasciculi have been published, and these contain more than a thousand descriptions of larvæ, pupæ and perfect insects, with the plants on which the larvæ feed, and other details of their life-history: the work is worthy the support of all lovers of the Science; nothing can exceed the delicacy and finish of the figures: we regret, however, to observe, a sad confusion of names in the instance of Cidaria russata and immanata;

none of our continental friends seem able or willing to recognize the distinction between these species.

Entomologist to the Royal Agriculturist Society.—This appointment is proposed: I sincerely hope that on the occasion those who have it in charge will waive all those qualifications of poverty, number of children, relationship, clanship, interest, &c., which govern the appointment of beadles or curators of museums, but select the man whose knowledge of the Science will do most honour to his appointment, and render the greatest service to the Society, and through the Society to the agricultural interest.

EDWARD NEWMAN.

Life-history of Lithostege griseata.—This moth seems to be local as regards England, having only been noticed near Brandon in Suffolk, and near Thetford in Norfolk. It flies during June, and has been observed during every week in that month laying its eggs on Erysimum cheiranthoides (worm-seed treacle-mustard). For a first knowledge of its economy we are indebted to that excellent observer Mr. Brown, of Cambridge, previously to whose discovery the larva was unknown. The young larva is hatched about the end of June, and may be found feeding during the whole of July, and entering the earth in order to undergo pupation at the end of that month. Its chief and favourite food consists of the seed-pods and seeds of the Erysimum, but it will also occasionally eat the leaves and flowers, as well as feed on Sisymbrium Sophia (pin-leaved hedge-mustard or flix-weed, unless, indeed, this name has been given by mistake), Sisymbrium officinale (common hedge-mustard), and Capsella Bursa-Pastoris (common shepherd's purse): these two last-named I have found acceptable to its taste in confinement, although I am not aware that it has ever been found eating them when at liberty. The mode in which it operates on the long pod of the Erysimum is curious: it begins nibbling the pod just below the dumpy undivided stigma (which, in the numerous specimens before me, is invariably left untouched), and eats its way down one valve of the pod, consuming every seed in its downward progress, leaving the median septum, as well as the opposite valve of the pod entire; arrived at the foot-stalk it crawls to the top of another pod, which it serves in a precisely similar manner; thus every pod is robbed of half its seeds, and the other half is left to arrive at maturity as best it may. When full grown the larva rests in a straight position, with the head porrected on the same plane as the body; when annoyed it falls, in a seemingly inanimate condition, bending the head rather downwards, but makes no attempt to assume the ring form; the head is very slightly wider than the 2nd segment, and has no perceptible notch on the crown: the body is of uniform substance throughout; it is rather convex on the back, dilated on the sides into a manifest skinfold, and flattened on the belly; the anal flap is obtuse, the anal claspers spreading nearly at right angles with the flap, and rather exceeding it in length. The colour of the head is gray-green, irrorated with dark purple (almost black) dots: in some of my larvæ these are associated in four groups, two on each cheek; in others they form but one group on each cheek; and in some instances they are scattered, apparently without arrangement, over the head; the ocelli, five in number, are black, and are situated near the bulbous base of the antennal papillæ, the papilla itself being transparent and colourless: the prevailing tint of the body is pale smoky bottle-green: there is a compound medio-dorsal stripe, consisting of seven divisions; the outer of each on each side is much lighter than the others, the tint of which is alternately lighter and darker, but none are very distinct; the skinfold is white, or nearly so, and is dilated into a whitish patch on each side of each segment; in the centre of this patch is the brown spiracle: the dark and light tints alternate transversely, as well as longitudinally, so that the body seems indistinctly annulated with bottle-green and pale gray-green; the ventral claspers are pale smoke-colour, just perceptibly tinged with green; the anal claspers are of the same colour, with three indistinct darker lines extended to the feet: the belly is almost white, with two indistinct darker stripes extending from the legs to the claspers; between the legs and between the claspers the belly is green. My specimens were full fed, and went under-ground, on the 23rd of July; examined on the 28th I found they had buried themselves to the depth of two inches, as far as the vessel in which they were confined would allow, and had become shorter and stouter, the colour having changed and assumed a regularly annulated appearance. On the 1st of August I turned out and examined the earth, being anxious to describe the pupa. I found they had undergone their transformation; each had formed a neat little cell in the earth, but without any admixture, so far as I could perceive, of silk; the head-case of the pupa forms a small and slightly-projecting knob; the case of the prothorax, or perhaps tippets, is also knob-like on the back; the wing-cases are of medium length, and the wing-rays are rather strongly marked; the surface is rather deeply and confluently punctured, giving the pupa a dull appearance, which I mention in contradistinction to the glabrous exterior so commonly observable in pupæ; and there is a deep medio-dorsal puncture on the 5th, 6th, 7th and 8th segments, and each of these deep punctures is surrounded by a glabrous space; the abdomen terminates in two very acute and moderately long divaricating spines. The contour of the wing-cases is dull greenish and semi-transparent, and that of other parts dull pale brown. This moth is the Phalæna griseata of the Vienna Catalogue, as first pointed out by Mr. Doubleday; and also of Hübner, Treitschke, Duponchel, Boisduval, Herrich-Schæffer, Guenée, &c. The late Mr. Stephens gave it the name of Minoa niveata, in a footnote, at p. 147 of his 'Systematic Catalogue,' evidently supposing it to be the Phalæna nivearia of Scopoli and Fabricius; and English entomologists have generally preferred adopting this transference of names. The late Mr. Curtis, also, gave it a new specific name, Clarkiata, as a well-merited compliment to a Miss Clark, a very accomplished entomologist, who, I believe, captured the first recorded British specimen, and whose family Mr. Curtis frequently visited at the time. Miss Clark subsequently became Mrs. Cole; and to the obliging kindness of her son, Mr. W. H. Cole, I am indebted for a supply of the larvæ, and much information respecting the economy of this interesting insect. I ought also to mention that the Phalæna farinata of Borkhausen, a name applied to the species, is identical with Nivearia of the Vienna Catalogue, and is totally distinct from our British insect. In my 'British Moths' I have restored the prior name of Griseata. Herrich-Schæffer places it in the genus Chesias; but it may be remarked that the genera of Geometræ have been purely fanciful up to the date of Guenée's great work, and entirely independent of that affinity, which such associations were originally intended to indicate. — *Edward Newman.*

Life-history of Aleucis pictaria.—The moth, which so long eluded the grasp of our most ardent, most practised, and most skilful collectors, makes its appearance in the winged state during that fearful time which poets denominate "balmy" and "gentle," which they apostrophise as "ethereal mildness," and which they tell us "comes veiled in a shower of shadowing roses," while "sportive zephyrs play"; but which our prosaic ancestors curtly designated "blackthorn winter," and which we ourselves dread as the season when east winds hold their revels, sowing catarrh, bronchitis, consumption and all manner of dire diseases broadcast over the land. It is then that the sloe puts forth its bloom, assuming a whiteness undistinguishable, in the blinding drifting atmosphere of snow, from the flakes which are perpetually alighting on the blackened twigs for an instant and then hurrying forward on their horizontal career. It is then that Pictaria, having passed the winter in the pupa state on the surface of the earth, emerges from its self-selected grave, and, mounting upwards, crawls along the twigs with dainty steps, miraculously maintaining its foot-hold and balancing itself with its scarcely stiffened wings; it is then that it performs its hymeneal rites and procreative duties: incongruous choice! strange antithesis to the howling elements around! It is then that our collectors, undeterred by the surroundings, sally forth with candle and lanthorn, like Diogenes of old, seeking Pictaria with numbed fingers and purple noses. The eggs are laid on the blackthorn and abandoned to Nature, careful and sagacious Nurse, while the parents are hastened to destruction and battered to pieces by the fury of the blast. Of the infant larva we know but little, but when a fortnight old it may be beaten into the collecting-net or the umbrella from the dwarf blackthorns either at Dartford Heath or at Loughton, or in the New Forest, and a fortnight later we find it full grown and resting in a bent position on the twigs of the blackthorn, which it so closely resembles that I deem it next to impossible to distinguish one from the other when the larva is motionless: the head is slightly narrower than the 2nd segment, its position prone, its face flattened, its crown rounded and scarcely at all notched; the body is rather stout, of nearly uniform substance, but having the 3rd and 4th segments slightly swollen; the back is transversely, but not strongly, wrinkled or folded, and has several small warts, more especially on the 12th and 13th segments, each of which emits a small bristle-like hair; along each side of the body is a very imperfect and intercepted skinfold: the prevailing colour, both of the head and body, is dingy smoke-colour: the head has an ocellus-like mark on each cheek near the crown, and the body has a large amorphous whitish patch on each side of the 8th and 9th segments; in some specimens these patches almost meet on the back; on the dorsal surface of the middle segments there is a trace of the V-shaped mark so frequently occurring in Geometers, and a dark transverse line on the 12th; moreover, on each side of the 4th and 5th segments is an indistinct and vague oblique line, darker than the general ground colour; the belly is rather more variegated than the back, but altogether it is a most dingy-looking animal, and, like the perfect insect, it has no claim whatever to the title of "pictaria," unless on the principle said to be implied in the word "lucus," *a non lucendo:* "pictaria" *quia non picta.* From my knowledge of Mr. Curtis's character I entirely acquit him of this feeble attempt at wit; his was far too grave and solid a character to have descended to the light and frivolous. Towards the end of July the larva descends towards the earth, and changes to a pupa near the surface, without spinning any perceptible cocoon: it remains in the pupa state throughout the winter, and until the bitter blasts of another April have scorched the young leaves of the blackthorn in the futile attempt to unfold themselves. I am indebted to Mr. Machin for the opportunity of describing this larva.—*Edward Newman.*

Description of the Larva of Nemoria viridata.—When at rest its position is perfectly straight, except at the two extremities, both of which bend slightly backwards: the head is of nearly the same width as the 2nd segment and is deeply notched on the crown, which is produced into two points directed slightly forwards; the face is flat and its position prone, the mouth being thus brought into contact with the legs, to which it is closely appressed, the legs themselves being crowded into the least possible space, and together with the head combining to form a mass the component parts of which are undistinguishable: the body is cylindrical, excepting that the back of the 2nd segment has two pointed projections placed transversely, and having the same direction as those of the head; moreover, each side of the body is dilated into a slight skinfold, and the dorsal surface is slightly wrinkled; the anal flap is pointed at the extremity, and has its margins slightly recurved; every part of the skin is delicately shagreened, or covered with minute sessile granulations; the colour of the head, as well as the legs, is pale purplish brown; that of the body apple-green, with a medio-dorsal series of purple-brown markings, almost a medio-dorsal stripe, excepting that it is interrupted at the middle of each segment; the lateral margins of these markings is decidedly paler, and has a bleached appearance; the lateral skinfold is yellowish, the granulations being still paler, and imparting to the sides a frosted appearance. I am indebted to Mr. Hodgkinson for a specimen of this larva, which he found feeding on Salix viminalis (the narrow-leaved or basket-willow or osier). Two doubts have been suggested with regard to this insect: *first*, whether the specimens, as now arranged in our cabinets, constitute a single species or two species; and *secondly*, whether either of these is the Phalæna viridata of Linneus. With regard to the first of these doubts it may be observed, that Zeller has proposed, and Herrich-Schæffer has figured, two supposed species, under the names of Viridaria (fig. 567) and Porrinaria (fig. 566): Viridaria is represented as having a tendency to slightly pointed and slightly falcate fore wings, and as having their costa ochreous or pale brown; while Porrinaria has no tendency to the pointed and falcate form, and has the costa perfectly concolorous with the disk of the wings, but the abdomen is tipped with ochreous. Guenée is unwilling to express any opinion on this question, not having seen specimens named by the authors themselves. My own specimens, ten in number, which are decidedly faded, as these green geometers will fade, have the costa slightly reflexed or turned over towards the upper surface of the disk of the wing (which is, indeed, a very common result of drying), thus catching the light, and they certainly exhibit an ochreous margin; in the outline of the wing there is a tendency to the falcate and pointed form; the abdomen is not tipped with ochreous: these specimens are, therefore, Porrinaria of Zeller and Herrich-Schæffer. I cannot say, however, that I am willing to change the name, more especially as I possess no specimen that agrees with Viridata of Zeller: the subject is well worth investigation. On the other question, whether our Viridata be really the Viridata of Linneus, happily the Linnean specimen described in the 'Systema Naturæ' still exists, and proves identical with this species taken as a whole; but if our insect be "split" then it will be very difficult to decide which moiety shall retain the Linnean name.—*Edward Newman.*

Description of an Ephestia new to Science.—Ephestia Figulilella expands from ½ an inch to fully ¾ of an inch. Head and thorax silvery gray; abdomen whitish gray; superior wing gray, finely irrorate; costa round, first stria acute from costa outwards to discal space, then nearly straight or slightly inward, forms a rather broken line across the first-third of the wing; second striga placed beyond the third of the wing, acute from costa towards the discal space, afterwards wavy inwards across the wing (this marking is often ill-defined), then a well-defined row of about seven dark squarish spots; cilia silvery gray, having three dark fine lines through it; the outer one, broadest in the disk of the wing, is often a well-defined cuneiform streak, the point towards the angle of the first striga, and the fold of the wing is ochrey yellow along its whole length; inferior wings silvery, somewhat hyaline, the nerves showing plainly; cilia silvery white. This fine and distinct species has now been plentiful upon warehouse walls, in Liverpool, for several years; and I have bred it, upon figs and raisins, from eggs laid by copulated females. The second brood have produced small specimens, no larger than E. elutella; from it or its variety, semirufa of Haworth. From E. ficella of Douglas, its round costa separates it at a glance.—*C. S. Gregson.*

On Turnip Insects during 1870. By JAMES HARDY, Esq.

During the summer of 1870 the turnip beetle, or "fly" (Haltica Nemorum), has been a complete scourge throughout the Border counties. Turnips might be sown early or very late, in either extreme there was no palliative, so long as drought prevailed; and plants, insufficient in force for the maintenance of the devouring myriads, kept up merely a feeble and struggling existence. It was only through the advent of showers long delayed, and a mild atmosphere, that the crops got established, and at length out-grew their persistent persecutors; for not only did they swarm on the seed lobes, but continued to perforate the foliage and delay the growth, long after the plants were singled out; some even lingering in the fields till there were sizeable turnips. Near the sea-side the damage was not so great as further inland. My own Swedes did not require to be re-sown; but, as for the white turnips, it was by mere dint of persevering sowing that the ground got covered at all. Some parts of the fields, here, produce wild mustard, or "runch" (Sinapis arvensis). This was found to be a great preservative to the young turnip-plants, in allowing them to assume the rough leaf unbitten. The beetles took as readily to the mustard as to the turnip, it being their natural food; and I noticed that when the Swedes were nearly forward for thinning, the mustard obtained the preference. Owing to this, although the insects in some places lay on the plants like gunpowder, after side-hoeing and thinning the blanks were very few. I have heard that in other places, where mustard is in the soil, this also happened; so that it is not an unmitigated evil; being, in such seasons as the present, equivalent to thick sowing, in fields not liable to this weed.

I had previously remarked that the cruciferous wild plants (Arabis and Cardamine) on the dry banks were unwontedly frittered away during the present dry spring; but had no conception that such assemblages would spring, as it were, out of the dust so suddenly. If these feeding-grounds did not furnish all, they, at least, augmented the bands that gathered in on every side to invade the cultivated lands. It is wonderful, after all, that such a favourable crop has been realised. The disastrous outset in this district was, with the exception of the partial loss of the Swedes, in some measure repaired; and it was only some stubborn clayey fields that continued bare fallow, in spite of the master's skill.

Mr. Langlands has kindly furnished a notice of what happened to the crop in Northumberland:—"The ordinary turnip-fly was prevalent over all this district, with scarcely an exception, last summer. Its ravages were greater, and it continued them for a longer time, than I ever remember. In ordinary years it has generally attacked turnips—Swedes, especially—which have been sown early, and where the soil has not been in the most perfect tilth. This was not the case this season; the plants came away very well, and at first appeared to grow vigorously; when they were attacked by the fly, and withered off, leaving long stalks in many instances; the frosty nights completing the destruction. The flies continued to sweep off every fresh sowing,—one, two, three, and sometimes even four,—even after the middle of June, at which period we have, hitherto, always found the plants safe. Most of the Swedes were destroyed. I have a very few of the second sowing which escaped. The white turnip and hybrids that succeeded were also two or three times sown, and afterwards came away vigorously; and hereabouts have done well, mainly owing to the showers in August."

The turnip leaves were remarkably free from caterpillars; even the small caterpillar of the diamond moth was absent. In a few spots bordering the outcrop of rocks, which had supplied secure breeding places, I had a space of several yards breadth entirely eaten off by earwigs. They stripped the leaves, after the plants were thinned, leaving only the skeleton ribs; weeds and potatoes all went in the same way; till some change took place, perhaps the acquisition of wings by the young broods, when the nuisance abated. They fed only at night, and used to hide during the day in the soil, the fork at the tail being visible here and there at the surface, or clustered under clods and small stones. The workers killed numbers with their hoes; and for a few days the rooks and jackdaws held a high feast over the spot. This happened also at the sunny-side of stone walls, the turnip leaves being holed for some distance off.

But a still worse source of mischief lurked in some of the fields, and began to develop itself to an enormous extent towards autumn, *viz.*, the turnip louse, or Aphis, of which a notice was given in the Club's 'Proceedings' of last year. I first noticed them here among the Swedes (Aphis Brassicæ was the species), about the middle of September, on a few plants; whence in the drought of the last fortnight of that month, which was the most fruitful of all, they spread themselves in spots here and there, but did not occasion much hurt in this quarter. The worst effects of them anywhere that I witnessed was on Swedes, on the gravelly and sandy soils about Wooler. The Aphides had begun to predominate there, when the turnip casts its outer leaves, and while the drought and the mildew kept back the young foliage; and the consequence was most disastrous. The sickly leaves, oppressed with disgusting insects, hung flagging on the ground; and the plants drained of sap grew weaker every day. The smell of decaying turnips rose from the fields, fit to corrupt the air. The white and yellow turnips at the same time were infested with the green and pinkish Aphis vulgaris, called also A. Rapæ; and the fields wore as many tints of green, yellow and brown as the woods in autumn. I was told that in one inclosure the turnips were so disagreeable that sheep refused them. Other fields were being stripped of their produce to give to the cattle; thus losing a month or two's growth. One farmer told me, that as soon as the presence of the insects was manifest, he, in order to starve them, had got the tops of the Swedes cut off; and that they were sprouting again, and growing healthy. Crops that were kept growing were certainly best off, such as those latest sown, or those among the hills, on which only a few insects were present, while the earliest fared worst; but the proposed remedy is a desperate one, "more to be honoured in the breach than in the observance."

I have again recourse to Mr. Langland's report:—"In the beginning of September the turnip louse (Aphis Brassicæ) made its appearance; and its ravages on the early-sown Swedes, which had escaped the fly, were most pernicious. I was in the fine turnip district near Thirsk, and also on the Tees, at this time, and then first noticed the louse, which had already affected some fine fields of Swedes to a great extent. I found it appearing in this district, on my return, and it soon assumed a very destructive character. The early-sown Swedes, on the gravels and on strong land, seem to have gone off entirely. My own Swedes were partially affected only; but this I ascribe to the fact of being all later sown, and having suffered less from the drought. The Aphis prevailed with me, and did last year in circular patches; and not to any greater extent this year than last. I hear that East Lothian has suffered much. The worst, hereabouts, is near Wooler; and those I saw on the Tees were also very bad."

From East Lothian I have a communication from a competent authority, Mr. R. Scot Skirving, of Camptown. He is of opinion, in which I join him, that in Scotland we have little to fear from the "surface-grubs" of the Lepidopterous genus Agrotis, which Mr. Newman, in the 'Field' and the 'Entomologist,' considers to be so hurtful to the turnip. A much more deadly "grub" is that of the Tipula oleracea, or "crane-fly," which eats through the root just below the surface, and soon clears half a field. From this grub, this season, Mr. Skirving has lost, at least, thirty acres of turnips. He goes on to say:—"The 'fly' took the first sowing, the drought the second, and the crane-grub the third. From Tranent to Edinburgh, and all round Portobello, the turnips looked magnificent up to the end of August; and they almost caused me to 'envy and grieve at the good of my neighbour,' as I travelled on the railroad; but the turnip louse came and destroyed the Swedes, root and branch, and the fields became bare; whilst the soft turnips became bright orange, then dirty yellow and withered up, as if scorched by fire. This seemed rather *disease* than insect-work. Farms between Tranent and Edinburgh seem peculiarly liable to this, though I have seen it come all over the lower half of East Lothian. It does not attack Swedes."

The migrating epoch of the turnip Aphids took place in the end of September, as soon as the wings had developed; and for more than a week, during the calm and genial weather, they rose in succession from the turnip-fields along the valleys of the Till and Glen, till they became almost incorporated with the air, so intensely crowded they became. They grew very troublesome to those who had to go out. One had almost to breathe them. At night, or during dull days, they stuck to the threshold, to the grass by wall sides, or gathered upon hedges or trees. Many fell into the waters, or were swept from the grass on the brink. Beating the bushes for insects at Heathpool, I got my umbrella so filled with the roosting Aphides that I had to desist. Subsequently I saw that the flights had extended to Goldscleugh and Langley Ford, among the hills; several having been drowned in the burns. The "plague of midges," as they were called, was universal. At length came some heavy showers of rain and hail, which cleared the air, and perished and scattered the insects; and the turnips got up their heads again.

Entomology and other things at York.

By Edwin Birchall, Esq.

I had the pleasure lately of visiting, near York, the only English station of Epione Vespertaria: why Linnæus gave the name of Vespertaria, to an insect which does not fly in the evening, is a problem I am not prepared to solve; it can hardly have been on the *lucus a non lucendo* principle, for he lived before the facetious age of Entomology.

A flat boggy moor, covered with dwarf sallow bushes and ling and scattered Norway pines, looks and feels a dreary place soon after sunrise: the aspect of Nature varies with our own changing moods, and even fine scenery has no charm for a sleepy man. Coleridge truly said:—

> "We receive but what we give,
> And in our life does Nature live."

But it is Vespertaria's chosen place and hour:—

> "The dew of thy youth is from the womb of the morning."

About 7 A.M. the first specimen is seen on the wing; another and another rises, and presently the whole heath is alive with the brilliant little orange moths. By 9 A.M. the numbers are sensibly fewer, and soon not one is to be seen; the flight is over for the day. All the insects on the wing were males; the female may be occasionally found hanging to a twig of sallow, but seems never, or rarely, to take flight. No disproportion of the sexes, however, exists; when reared from the larvæ the numbers are equal, which brings me to my second criticism on the published accounts of Vespertaria:—the larva does *not* feed upon nut, as stated by Stephens, Stainton, and Newman (copied, I fear, from some other author), but on the dwarf sallow; the eggs are deposited in July upon the twigs of the sallow, but do not hatch until the following May; at the end of June the larva changes to a pupa in a slight web between the leaves of the food-plant, the perfect insect emerging on or about the festival of St. Swithin.

Round the heads of the pine trees I have mentioned, circled clouds of Fidonia piniaria; and on the boles are found Lithosia helvola, Ellopia fasciaria, Tephrosia punctularia, Acidalia inornata, Macaria liturata, Thera firmaria, Scotosia undulata, and many commoner species. The York specimens of Helvola are much larger than any I have seen from the South of England; the female is bright yellow, at first sight looking almost like Quadra, without the black spots of that species: it is a well-marked variety; possibly a distinct species.

Vipers abound on the moor, and two were killed; one of them measured two feet in length. A nightjar's apology for a nest, with two eggs, and a fully-fledged young sparrow hawk, over which Mr. Carrington cleverly put his net, were amongst the miscellaneous captures of the day.

A visit to the moor at dusk produced Lithosia mesomella, Acidalia inornata, Aspilates strigillaria, Pempelia palumbella, Crambus margaritellus.

It is wandering too far from the subjects to which the magazine is devoted to mention that the ground, over which the day's ramble extended, is that which witnessed the defeat of Halfagar, king of Norway, by Harold, on the eve of the Norman Conquest, at the Battle of Stamford Bridge, whence he led his gallant but disabled army to its doom at Hastings. It is 800 years ago; but what Englishman can look unmoved upon the scene of Harold's victory? The aspect of the field of battle is probably but little changed; the Derwent flows through a richly-wooded valley; there is a picturesque pointed bridge of great antiquity, and an old corn-mill by the waterside, with a little village clustered round it, much the sort of thing we may suppose to have existed here in Anglo-Saxon times; and somewhere near is the Northman's grave, that "six feet of English soil, or more, if his stature required it," which were the only terms Harold had to offer the invader.

In the woods, near Stamford Bridge, Arge Galathea formerly abounded, but it has not been seen for some years; indeed, several of our most conspicuous butterflies (notably Io, Paphia, Rhamni and Galathea) have lately become rare, or disappeared from the neighbourhood of York, Leeds and Sheffield, and this not from any "improvement" of the land, or, so far as appears, any alteration of the former conditions of their existence, but simply from their merciless pursuit and wholesale slaughter by the makers of butterfly pictures. The numbers thus annually destroyed are almost incredible. I have known 250 peacocks used in the construction of an elephant, and upwards of 500 Vanessa Urticæ in the figure of a crocodile 3 feet long! Galathea was an especial favourite with the tribe; a portrait of Lord Brougham in butterflies, the checked trousers depicted by Galathea's wings, is considered a very clever work of art. The ancient story of "Acis and Galathea" seems to have come true; that Entomological monster, the butterfly-picture maker, taking the rôle of Polyphemus in the tragedy:—

> "When fatal chance
> His looks directing with a sudden glance,
> Acis and I, were to his sight betray'd,
> Where nought suspecting, we securely play'd.
> From his wide mouth a bellowing cry he cast—
> I see, I see; but this shall be your last:
> A roar so loud made Ætna to rebound,
> And all the Cyclops labour'd at the sound.
> Affrighted with his monstrous voice, I fled,
> And in the neighbouring ocean plung'd my head.
> Poor Acis turn'd his back and Help, he cried,
> Help Galathea, help my parent gods,
> And take me dying to your deep abodes.
> The Cyclops followed; but he sent before
> A rib, which from the living rock he tore;
> Tho' but an angle reach'd him of the stone,
> The mighty fragment was enough alone
> To crush all Acis; 'twas too late to save,
> But what the fates allow'd to give, I gave
> That Acis to his lineage should return,
> And roll among the river gods, his urn."
>
> OVID'S *Metamorphoses*, Book 13.

August 8, 1871.

Entomological Notes, Captures, &c.

Captures on the Kent and Essex Coasts:—

Liparis dispar. Entomologists will be pleased to hear that Liparis dispar is by no means extinct, as the larva is not uncommon on the straggling bushes of sloe, whitethorn and wild rose, bordering the Essex marshes below Tilbury.

Emmelesia unifasciata. I am now breeding unifasciata from larvæ found last September, on flowers of Bartsia odontites, in this neighbourhood.

Pterophorus acanthodactylus. I may also mention that the larvæ of P. acanthodactylus feeds on the same plant at the same time; I bred several last October. The perfect insect hybernates.

Acidalia strigaria and Lythria purpuraria. I have again taken A. strigaria and L. purpuraria. Strigaria appears to be attached to Salvia verbenaca; but I am not yet prepared to say it is the food-plant of that species.

Pachetra leucophæa. I have a beautiful specimen of Pachetra leucophæa taken at Gravesend, on a wall, in the day-time, May 24. It was captured by Mr. R. W. Bowyer, of Haileybury College, who left it with me to name. It is a very strongly-marked specimen, and in perfect condition.

Eupithecia togata. I have taken a fine specimen of E. togata at light, in Rosherville Gardens, which is a capital place for insects.—*D. T. Button.*

Captures of Lepidoptera in July:—

H. Leucophearia. One very beautiful male on Victoria Park fence: 27th February.

A. Prodromaria. One on Hackney Marshes: 19th March.

C. Temeraria. At Loughton: 8th May.

N. Trepida. I found the eggs of this species on oak at Loughton, on 14th May.

O. Guttella. At Loughton, on 26th May.

D. Grotiana, S. Achatana, S. Rosæcolana, E. Signatana: at Loughton, 10th July.

P. Roborella, R. Suavella, R. Advenella, R. Marmorella, P. Dilutella, A. Flexula, C. Angustalis, C. Pinetellus, C. Splendana, C. Juliana, E. Tetragonana, S. Janthinana,

O. Funebrana, S. Redimitana, H. Nemorella, G. Gerronella, G. Mouffetella, G. Rhombella, G. Fugitivella, E. Lunarella, C. Palliatella, C. Currucipennella, A. Albistria, A. Mendicella, A. Semifuscella: I took all these species at Loughton, from the 12th to the end of July.—*William Machin; 21, Argyle Road, Carlton Square, Mile End, August* 11, 1871.

Captures near Canterbury during the last fortnight in July.—I send you for publication in the 'Entomologist' a list of my principal captures during the last fortnight in July, thinking they may interest some of its readers:—

C. Hyale. One male: on the 30th July.

A. Paphia. A fine series, including several of the female variety valezina, and a fine variety of the male.

A. Adippe. A fine series.

M. Athalia. Only a few stragglers.

A. Galathea, S. Semele and Hyperanthus. Abundant.

T. Quercus. A nice set.

L. Ægon. A fine series of males.

L. Corydon. In swarms.

H. Comma and H. Linea. A fine series of each.

N. Strigula. A beautiful series; at sugar.

N. Senex. One; at sugar.

C. miniata. Plentiful; at sugar.

L. mesomella. A few; at sugar.

L. complana. A fine series; at sugar.

L. complanula and griseola. A few; at sugar.

L. chrysorrhœa. Bred a fine series, including several varieties.

L. monacha. One, bred from a larva taken off sugar.

A. prunaria, G. papilionaria, E. heparata, A. osseata, A. inornata. A few fine specimens of each.

C. picata. A fine series.

T. derasa, T. batis, C. duplaris, C. or, C. fluctuosa. A few fine specimens of each.

A. leporina and A. Ligustri. A few series, including a variety of the latter.

T. fimbria. Excessively abundant; as many as twenty with every variety of colour on one tree.

H. derivalis and S. cratægella. A fine series of each of these; at sugar.

C. pinetellus and R. consociella. Common; at sugar.

A. Aglaia, E. ochroleuca and T. obscurata are just coming out.—*George Parry; Church Street, St. Paul's, Canterbury, August* 4, 1871.

Agamogenesis in Orgyia cœnosa.—Three weeks ago I found, in Wicken Fen, a full-grown larva of O. cœnosa, and I put it in a box by itself. During the night it spun its cocoon, and five days afterwards it emerged, a fine female; a few days after it laid more than fifty eggs: they duly hatched, and are now under the care of Mr. Hellins. I am quite certain that this female was not impregnated before laying its eggs, as it was completely isolated from coming into contact with any male. A similar circumstance occurred with me some few years ago; the species then were Smerinthus Tiliæ and S. ocellatus.—*Thomas Brown; 13, King's Parade, Cambridge, August* 18, 1871.

Curious variety of Argynnis Euphrosyne.—Upper surface: fore wings fulvous, almost entirely covered up with black; the fulvous markings are an indistinct patch at the base, broad at the inner margin, and sending a narrow streak along the hind margin; three small indistinct spots on the right, and two on the left wing, near the centre, and six oblong blotches from beyond the centre to the hind margin; each of these, except the one nearest the costa, contain about their centre a large indistinct black spot. The hind margin consists of black triangles running up to the centre on the wing-rays; the hind wings are black, except a row of oblong blotches on the hind margin, similar to those on the fore wings, but containing no black spots; the under side of the fore wings is yellow at the apex, and the remainder reddish orange, with eight black spots of various sizes near the centre; on the under side of the hind wings the silver spots entirely cover the hinder half of the wings; each spot is, however, kept distinct by the reddish wing-rays; the central spot is produced, both wings meeting the silver spot on the hind margin, and running up to the base of the wing; there are two silver spots at the base, and one on the costa; the rest of the wing is bright ochre-yellow; all the markings are indistinct, the colours running one into the other, especially so on the upper surface. I took this variety here, on the 24th of May, in company with a number of commonly-marked specimens.—*F. E. Harman; The Valletts, Whitfield, near Hereford.*

Agrotis puta.—I took a specimen of this moth on the 29th of May. Is it not very unusual for this species to be double brooded?—*Id.*

Acronycta Alni near Chesterfield.—I have a good specimen of Acronycta Alni, taken at rest on oak, by John Beresford, near Chesterfield, on the 20th June. He informs me that, although a collector forty-five years, this is only the third he has met with; the other two both being taken in one season.—*John M. Hewitt; Fairfield, Brampton, Chesterfield, July* 6, 1871.

Photedes captiuncula at Whitbarrow, near Bowness; Rothliebii at Witherslack.—Observing that both yourself and Mr. Stainton give Darlington as the only locality for Photedes captiuncula, I am induced to send you another, *viz.* Whitbarrow, near Bowness, where I took it in June last, flying swiftly in the sunshine. C. Davus *var.* Rothliebii was out at Witherslack on June 17th, in fine condition.—[*Rev.*] *Windsor Hambrough; Clarendon House, Worthing, July* 9, 1871.

Lobophora hexapterata al Limerick.—I took this insect freely on the evening of the 20th of May and few following days. Many were paired on the trunks of the aspens; they laid their eggs seven days after: the eggs took five days to hatch: the larvæ are, I think, nearly full grown. I send you some by this post for description, as I have not seen it described by you. I hope they will arrive safely.—*William Talbot; Tieraclea, Tarbert, Limerick.*

[They arrived in perfect safety. Please to accept my best thanks.—*Edward Newman.*]

Food of Homœosoma saxicola of Vaughan.—Whilst in the Isle of Man taking the larvæ of Polia nigrocincta, this month, I paid some attention to Homœosoma saxicola (*Vaughan*), and took a good series, which are identical with specimens bred by me from larvæ, taken by myself and Mr. Warrington, feeding on the flowers of Matricaria inodorata, some years ago, at Port Soldoric or Sodoric, a few miles from Douglas. I also set a long series of Sesia philanthiformis, which I shall be pleased to send to any of my old correspondents, still wanting it, who will remind me, or to fellow-workers unknown to me, on their sending boxes, or to those who prefer exchange for any Sesia, except tipuliformis: perfect specimens wanted to replace old ones.—*C. S. Gregson; Rose Bank, Fletcher Grove, Edge Lane, Liverpool, June* 25, 1871.

Macaria alternata and Diphthera Orion at East Looe.—I have taken one specimen of Macaria alternata and several of Diphthera Orion this year.—*Stephen Clogg; East Looe, July* 12, 1871.

Extracts from the Proceedings of the Entomological Society, July 3, 1871.

Coleoptera collected in Ireland.—Mr. S. Stevens exhibited a collection of Coleoptera formed by him during a recent tour in Ireland. The most interesting species was Chlænius holosericeus, of which he had captured several examples at Killaloe, near Lough Derg.

[The complete list is published in the 'Entomologist' for August.—*Edward Newman.*]

Emus hirtus in the New Forest.—Mr. Champion exhibited Emus hirtus, recently captured by him, in cow-dung, in the New Forest; being the only instance of its occurrence since the late Mr. Alfred Haward found a specimen many years since. He also exhibited two new British species of Hemiptera, *viz.*, Corizus Abutilon and Drymus latus.

Botys fuscalis, with a portion of the puparium still attached.—Mr. Stainton exhibited (on behalf of its captor, the Rev. R. P. Murray) an example of Botys fuscalis, from the Isle of Man, to the head of which still adhered a portion of the puparium. The antennæ and haustellum were free, but the case of the latter projected perpendicularly from the under side of the head, simulating the rostrum of a Panorpa. The insect must have been nearly blind, yet it was flying briskly at the time of capture.

Insect-enemies of Strawberries.—Mr. Dunning read a letter he had received from the Rev. W. H. Wayne, of Much Wenlock, stating that both this year and last his ripe strawberries were infested by a small Myriapod, which entered into the interior; there were often six or eight in one strawberry, and they were often eaten without detection. Mr. Wayne also stated that his young carrots were injured by what he seemed to consider the same creature, but, from examples he sent, the depredators in this case were evidently the larvæ of a Dipterous insect, Psila Rosæ. The larvæ first showed their presence by a slightly crumpled appearance of the leaf, which commenced to drop. On taking up the carrot no root-fibres are observed, the slender portion being dry and brittle, and in the centre is found the larva. He observed that all his neighbours' gardens were infested in a similar manner. Mr. Druce said that the carrots in his brother's garden, at Kingston, were destroyed by the same larvæ.

Monograph of Stylopites.—Mr. S. S. Saunders read a paper on these parasites, dividing them into subfamilies, according to the Hymenopterous tribes with which they are associated: namely (1), the true Stylopidæ, found with the Mellifera of Latreille; (2) the Myrmecolacidæ, with the Formicidæ; (3) the Xenidæ, with the social wasps; and (4) the Pseudoxenidæ, with the solitary wasps and Fossores; these latter tribes coinciding more or less in their habits and economy, and requiring about eight or nine months (from one year to the next) to attain maturity; involving a corresponding detention for their Strepsipterous dependents; whereas the true Xenidæ, corsorting with the social Vespidæ, must be reared from their primary hexapod condition in from thirty to forty days, such being the term within which the larvæ of the social Vespidæ attain the imago state; the females of the latter hybernating with those of Xenos, which produce their larval brood the ensuing year; whereas the Pseudoxenidæ, after their long-protracted larval condition as aforesaid, must produce their young the self-same year in which they themselves complete their transformations, in order that their brood may obtain access to the future larva-cells of their non-hybernating foster-parents. As a sectional division for those which associate with the Fossores (as first noticed by Dufour), Mr. Saunders proposed the term Paraxenidæ. The genera and subgenera recorded were eight in number, comprising 21 species, as follows:—Halictophagus, 1; Stylops, 5; Hylecthrus, 3; Elenchus, 3; Myrmecolax, 1; Xenos, 2; Pseudoxenos, 3; and Paraxenos, 3. Of these 16 were European (whereof 7 British), and 5 extra-European.

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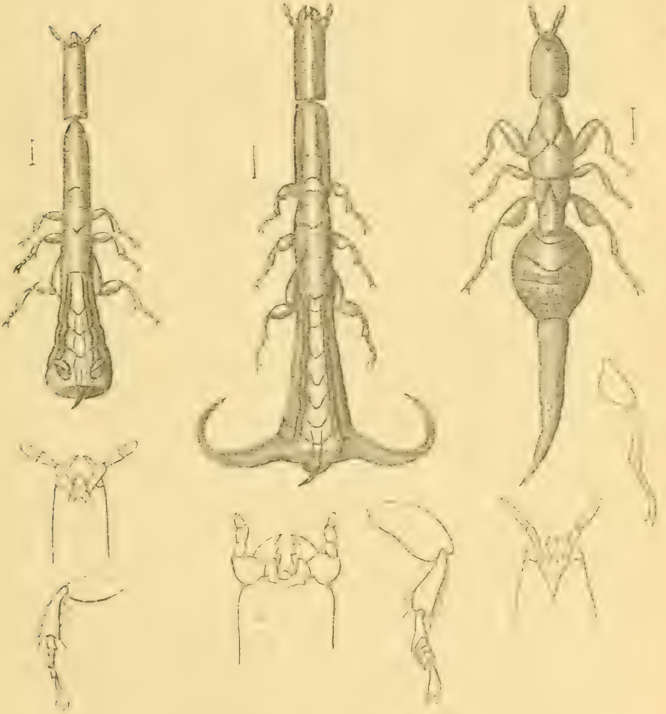
Answers to Correspondents.

Fig. 1. Fig. 2. Fig. 3.



BLIND INHABITANTS OF FIGS.

Fig. 1. Apocrypta perplexa. Fig. 2. Apocrypta parodoxa. Fig. 3. Sycocrypta cœca. All the figures magnified; the line by the side of each shows the natural length. The anatomical details, also magnified, are given below the entire figures.

The Blind Inhabitants of Figs.—The so-called caprification of figs has long been attributed to the punctures of a species of Cynips, called Cynips Psenes, and although the soundness of this view has been disputed by a most distinguished traveller and observer, Hasselquist, and also by one of our most learned entomologists, Olivier, still the phenomenon of caprification and its accelerations, through the instrumentality of insects, are matters of current faith. It is said that the Cynips is induced, by the earlier ripening of the wild fig, Ficus terragena, to prefer these as a nidus for its eggs, and that the larvæ produced therefrom, having thus become denizens of these figs, go through their metamorphoses earlier than they would have done in the cultivated species, and when ready to emerge they become covered with pollen, which they carry with them wherever they go. The cultivators, taking advantage of this propensity, gather the wild figs, and place them near the cultivated ones; and the pollen-covered insects have thus the opportunity of conveying the fertilizing element to the latter. "Such is the account of the process given by some authors; but Lindley ('Penny Cyclop.' vi. 273), DeCandolle ('Physiol. Végét.' p. 580), Treviranus (in 'Linnæa,' 1825, with figures of the insect), and other vegetable physiologists, attribute the earlier ripening of the otherwise later crop, and the opportunity thus afforded to the fig-growers of the Levant of obtaining a double crop in a season, to the well-known fact, that fruit bitten by insects ripens sooner than others; the wound, and not the act of impregnation, appearing to act as a stimulant to the local action of the parenchyma." ('Westwood Introduction,' vol. ii. 165.) This brief but comprehensive summary of the opinion of these learned naturalists, by removing one difficulty rather tends to introduce another, for it assumes that the Cynipidæ, in their perfect state, are vegetable-feeders, an assumption which the discoveries of Dr. Coquerel, as cited below by Mr. Walker, seem to support. Mr. Walker places the strange creatures, of which he has most obligingly lent me the carefully-finished figures, in the family Agaonidæ. This family forms part of the section Chalcidiæ, on which he is issuing a work in small fasciculi, four of which have already appeared. His observations on the Agaonidæ are as follows:—"The Agaonidæ appear as yet chiefly in three different aspects, and in three different regions. The first region is the Mauritius, where they have been discovered by the researches of Dr. Coquerel. Here the three species figured are said to be 'condemned to eternal darkness' in the central regions of figs. These figs are the fruit of Ficus terragena, and are unfit for human food. Dr. Coquerel found the three species (the figures of which are given above, copied from the plate in the 'Revue et Magasin de Zoologie,' 2nd series, vol. vii. pp. 365 and 422) in abundance in the interior of these figs, together with great numbers of a fourth species, which he named Chalcis? explorator, and which he believed to be parasitic on the other three species. However, he did not ascertain it to be so, but merely observed that the four species were mingled together, and he had previously seen the explorator flying about the outside of the figs. The other three species, he observes, are remarkably inactive: when disturbed they roll themselves together and remain motionless; they have no eyes, no ocelli, no palpi, no maxillæ, no wings; but have powerful mandibles. Dr. Coquerel mentions that they have analogy with Scleroderma contracta, and supposes that the males are winged and unknown, and may have their place next to Scleroderma. Scleroderma has no near affinity with the Bethylidæ, and has been supposed by some to belong to the Mutillidæ, and by others to be the female of Myzine: it has some resemblance to the female Australian and South American Thynni, and by these connections the primitive and semichaotic forms, discovered by Dr. Coquerel, expand into the numerous and powerful tribe of aculeate Hymenoptera, surpassing other insects in intellect, of which the wasp and the bee are most familiar examples, though a great part control other orders of insects, by using them as food for their young. Scleroderma seems to have more affinity with Typhlopone, the 'worker' of Labidus, and with Dichthadia glaberrima, the supposed female of Dorylus; and thereby the multitudinous tribe of ants, whose economy is so remarkable, emerges from the blind and radical Apocryptæ and Sycocryptæ, the perpetual dwellers in the interior of figs. But the affinity of these two genera to the Chalcidiæ is more evident, and appears by several connecting links in the Agaonidæ; and thus the near relations to the general ancestors of the thousands, and perhaps tens of thousands, of the Chalcidiæ species, the tribe being considered in unity, are cradled in figs. The Chalcis? explorator of Dr. Coquerel is an Idarnes, and has a resemblance to the Podagrion, figured in Part 3, but is much smaller, has a much longer oviduct, and has slender hind femora. It flits about the outside of figs, and by means of its long oviduct it comes into juxtaposition with the blind inhabitants within, of which it is a relative, though by many removes. It, doubtless, wings its way from fig to fig when full grown; but the succession of the other fig-dwellers is not known. The following species of this family have been observed in the figs of Ficus Indica, in Hindostan, by Sir Walter Elliot, who saw several other species of insects feeding on the fig-juice that flowed in consequence of the occupation of the Agaonidæ within. He has remarked that of the genera resembling some Hymenoptera and Termes, or the white ant, we have workers as well as males and females." The species to which Mr. Walker alludes in this paragraph are Sycobia bethyloides, Idarnes transiens, I. stabilis and I. pteromaloides, and Sycophila megastigmoides and decatamoides: so far as known they are all connected with figs, either as food or as a habitation. Mr. Walker concludes his paper on the Agaonidæ with the following observations:—"The Agaonidæ occur in the Mediterranean region, where they have been used in ancient time and in modern time for caprification, a process which has been described by various writers. Two of these species have been named Blastophaga Sycomori and Sycophaga crassipes: the latter has a long oviduct, and therein resembles Idarnes. Agaon paradoxum represents this family in Sierra Leone; it and Blastophaga are connecting links between Idarnes and Sycobia, from which they differ in not having prominent mandibles. Idarnes Carme inhabits St. Vincent's Isle, in the West Indies, and exceeds the other species in the length of its oviduct. Idarnes and Agaon were first included in one family by A. H. Haliday. Paphagus Sidero also inhabits St. Vincent's Isle, and belongs to the Agaonidæ. Cinospilus Acasta, a native of England, established as a genus by the names of Anthophorabia and of Melittobia, may be placed next to the Agaonidæ. It has been often said that the present state of one region of the earth, as regards its vegetation and animal life, resembles the much earlier state of another region, and thus the aspects of the Agaonidæ in different regions represent successive epochs of time, and indicate how much there is yet to be learned by the investigation of figs. Perhaps some forms may be discovered that are more elementary than the species here figured, and are more characteristic of 'the dark backward and abyss of time.' There will be much difference of opinion as to whether the chain of affinities in the Agaonidæ is merely a proof of the unity of system, or whether individuals in some cases continue comparatively undeveloped, and in other cases become comparatively highly organized, like as the same parts of plants are formed into thorns or into leaves or into flowers." It seems almost impossible to overrate the interest which attaches to this subject of fig-dwellers. The circumstance that these creatures are without the means of vision or locomotion does not, indeed, appear extraordinary, seeing they are condemned to perpetual darkness and perpetual imprisonment. Of what use would eyes or wings be to them? Then, again, of what sex are they? Is there any relationship, I mean consanguinity, between the prisoners and the winged atoms flying from fig to fig? And these are females, invariably females, with long ovipositors that *could* communicate with the imprisoned. We have winged males and apterous females in Lepidoptera. Can we have winged females and apterous males in Hymenoptera?

Black-varnished Pins.—For many months I have been endeavouring to discover a manufacturer of black-varnished entomological pins. These pins should be substituted for the silvered-brass pins, which corrode in the body of insects, more particularly of Micro-Lepidoptera, very soon disfigure them, and eventually utterly destroy them. I am told the article required is made at Vienna, and, if so, I beg some brother entomologist will give me the address of the maker. —*Peyerimhoff.*

Our colleague is obviously right in saying that brass pins are very bad to use for Micro-Lepidoptera. Varnished brass pins will probably last somewhat longer, but it is probable that these also will eventually perish in the same way. We believe that platinum wire is perfectly indestructible, and open to none of the objections which are made to brass. Certainly nothing but platinum will, therefore, be used for very rare specimens.—*Editor; P. N. E.*

Educational Collection of Insects.—M. Deyrolle is making a number of educational collections for the use of those who are beginning the study: he is in utter want of some of the most common species in considerable number for this purpose; for instance,—the more common species of Cicindela, Carabus, Coccinella, &c. among Coleoptera; Pieris Brassicæ, Agrotis Segetum, &c. among Lepidoptera,—Forficula auricularia, Libellula, Vespa, Apis mellifica, Notodonta, Thrips, &c. I most cordially approve of this method of teaching, and hope the example may be followed in this country, where we at present have no idea of educational collections.

Monograph of the Genus Phalacrus.—M. Tournier is about to publish a monograph of the genus Phalacrus; the plates are engraved, and the descriptions are ready to be placed in the hands of the printer.—*P. N. E.*

Borbopora Kraatzii.—M. Henri Brisout de Barneville has captured, at Marly, this very rare little Staph, which might be taken at first sight for Autalia: this little insect, which had been found in England and described in Germany, had only been once previously taken in France, by M. Aubé. This unique specimen still remains in his collection.—*P. N. E.*

Entomology of Syria.—I have been unfortunate in collecting at Acre and Nazareth, but have succeeded better in my campaign at Baalback and Stora, whence I have to report a number of interesting species. Not having my notes at hand, I must defer to my next letter a detailed report; but I may mention having taken Pimelia bajula, Zophosis asiatica, Amnodeis giganteus, Adesmia area and carinata, Tentyria collatina, Colyptopsis Jeremias, an undescribed Dorcadion, some magnificent species of Malachius, a singular Hister which resides in ants'-nests, Thorictus orientalis, &c. I have received from Jaffa a specimen of Ateuchus Silenus: as it may be presumed this insect will readily be found in that locality, I shall look for it very diligently, for it is a very interesting species.—*Peyron; P. N. E.*

Collections of M. Armand David.—We have had an opportunity of examining the collections made by this industrious entomologist, of which we have already spoken from the Report of M. Blanchard. We observe that tropical forms prevail among the Lepidoptera, and boreal, or European, among the Coleoptera, although each class exhibits this mixture in a very decided manner. Among the Coleoptera which were not mentioned in M. Blanchard's Report, we observed some of great interest, such, for instance, as the Cicindela tricolor of Siberia, three species of Purpuricenus (two of which closely resemble our own), a species of Anoplistes, a magnificent Dorcadion, a Clytus of large size and very remarkable appearance, a Cyrtognathus, a species of Akis, several Gymnopleuri, Sisyphi and Orthophagi (nearly related to oar own species), Anomala holosericea, &c. We have been disappointed at noticing, in three boxes of Coleoptera, the absence of the more striking species, such as Carabus pustulifer, Eriplotrupes sinensis, the Goliathi, and others no less interesting. It can scarcely be the fear of accidents to these valuable species that has prevented their exhibition, since admission was by tickets, which were only handed to gentlemen occupied in natural-history pursuits. It cannot be the fear of injury from light, since the collection has scarcely been exposed a week; and the Lepidoptera, the colours of which are most sensitive in this respect, are not yet exposed; while the Coleoptera are placed so nearly in the dark that they can scarcely be seen, much less examined. —*Editor; P. N. E.*

Anthicus bimaculatus.—Dr. Marmottan, in an excursion he has lately had in company with M. Berce, has discovered, in an essentially dry spot in the Forest of Fontainebleau, specimens of Anthicus bimaculatus, a species well known as a dweller on the sea-coast and the banks of rivers, but not previously found in dry situations.—*Id.*

Coleoptera near Nantes.—At the last sitting of the Entomological Society of France, M. Chevrolat gave some account of an entomological excursion he had made, during the second siege of Paris, to Saint-Florent-le-Vieil, near Nantes. He found two beetles new to Science:—a Sitones, which he proposes to call S. guttulata; and an Orchestes, for which he proposes the name of A. luteicornis.—*Id.*

Limexylon navale.—M. Berce observes that this beetle, noticed in the last 'Entomologist,' is very common in the timber-yards, and has occurred in the forests of France. It was esteemed rare in the Forest of Fontainebleau, where single specimens only have been taken; but this year M. Berce has met with it in immense profusion in oaks which had been felled: the females were engaged in oviposition, which they accomplished by introducing their ovipositor into the fissures made in cutting the trees. It is evident that the trees thus infested will be rapidly destroyed; but M. Berce thinks they might readily be saved by some of the numerous applications recommended to preserve timber.

Cockchaffer in March.—During the past March one of our men has found several specimens of the common cockchaffer, Melolontha vulgaris (which the country people here call the "May beetle"), buried in the earth. One which the man brought me last week was alive, and in fair condition. As I cannot find a complete life-history of this insect in my books, I am curious to know if these specimens emerged from the pupa during the autumn, and passed the winter in the perfect state under-ground.—*C. J. Watkins; King's Mill, Painswick, March* 3, 1871.

The larva of the common cockchaffer is found in that state during nine months of the year, but of various sizes and in various degrees of maturity. It is said to live four years before turning to a beetle; and I believe this final change generally takes place in March or April.

Name of a Moth.—Would you kindly tell me what moth the two enclosed wings belong to? I cannot find it amongst the Noctuæ, to which it evidently belongs, in your work on 'British Moths.' I found them in a spider's web.—*John A. Lilly; Collaton Vicarage, August* 21, 1871.

The wings are those of Halias quercana: it is not included in my volumes of 'Butterflies' and 'Moths,' because these only comprise the Macro-Lepidoptera. I adopt the division employed in Staudinger's Catalogue; leaving the Micro-Lepidoptera for a more competent hand.

Tenacity of Life.—A somewhat remarkable instance of tenacity of life in insects came under my observation on July 17th. On the morning in question the enclosed insect, or rather portion of an insect, was crawling up a blade of grass, and attempting to fly. It attracted my attention from the peculiar manner in which the fruitless attempt was made. I boxed it, and it lived through the whole of that day and the following night, and up to the following mid-day. How long it had been in this almost bodiless state, before I saw it, of course I cannot say; but it certainly lived some thirty or forty hours after I found it, in its present very mutilated condition. I supposed a bird might have been the cause of this mutilation. What is the insect?—*G. Bentley Corbin; Ringwood, August* 24, 1871.

The insect is Eristalis tenax: its abdomen was completely gone.

Moths and "Sugar."—Why is it that we so much more frequently take *males* than *females* of those species which are attracted to our sugar-bait? And the same question may be asked of "light." Are we to suppose there are a superabundant number of the former, or that the latter are less active, and, consequently, less oftener met with? In rearing we often find a pretty equal balance in the number of the two sexes; but at sugar, and even with the net, the males are ten to one of some species. The other day in speaking on this point to a friend, who is much in the habit of sugaring, he introduced what to *me*, at least, was a new hypothesis, *viz.*, that a female of any moth taken at sugar seldom deposited eggs, and if such a thing happened they never produced larvæ. Is such a fact proved, and is it well known? It would depend, I should say, upon what the so-called "sugar" was composed of, as we are well aware the receipts for it are various; some containing poison, others none.—*G. Bentley Corbin.*

These are questions which my kind correspondents, the Rev. Joseph Greene and Mr. Doubleday, are far better qualified to answer than I am: my experience in sugaring is very limited. I hope they will kindly reply.

Larva of the Cinnabar Moth.—I have forwarded to you a box containing a larva, and shall be much obliged if you will be kind enough to let me know its name (Latin and English). I have sent some of the food I found it reposing on; and shall also feel it a favour if you will tell me whether it feeds on anything else?—*B. W. Neave; 6, Montague Street, Worthing, August* 6, 1871.

The Cinnabar (Euchelia Jacobææ) is figured No. 68, at p. 31, of 'British Moths:' it feeds on the Ragwort (Senecio Jacobæa), and nothing else.

Tape-worm in the Biliary Ducts of Salmon.—Can you tell me the name of a tape-worm which inhabits the biliary ducts of salmon? I got some a few days since, and wish to know the name.—*William Talbot; Tarbert, Limerick.*

Will some correspondent who understands the subject kindly answer this.

Parasitic Acarus on Crane-flies.—Whilst sugaring in the New Forest this year, I observed a crane-fly on the sugar, several of whose legs had little red Acari clinging to them, the same kind, I should say, that I have observed this year on the antennæ of several Noctuæ, especially Rusina tenebrosa. —*Edward F. Bisshopp; Berners Street, Ipswich, September* 4, 1871.

Those on the crane-flies are certainly Ocypede rubra (see p. 374); those on the antennæ of Noctuæ I can only suppose to be the same.

EDWARD NEWMAN.

Description of the Larva of Acidalia Emutaria.—A female Emutaria, taken July 26th; egg hatched, August 3rd; fed on Polygonum aviculare; some larvæ full grown, August 27th. Length, when full fed, about an inch; skin rugose, colour of an iron-gray; head iron-gray, with two lines of a darker shade on upper side; dorsal line dark iron-gray, inclining to black on either side; subdorsal lines scarcely darker than ground colour; spiracles black, on each side of the dorsal lines on the 3rd segment is a small black spot, in size and shape like a spiracle; belly gray; a few bristles, most on the first 3 segments, are scattered over the body. When disturbed the larva assumes a perfectly straight position, with the head and prolegs directed forwards; if much irritated, it falls from food-plant and rolls itself up.—*A. B. Farn; September* 13, 1871.

Description of the Larva of Acidalia immutata.—On July 21st, 1870, I received a few eggs (or rather larvæ, as the eggs had hatched on the way) of Acidalia immutata, from the Rev. J. Hellins, of Exeter; and, subsequently, the Rev. E. N. Bloomfield, of Guestling, near Hastings, sent me a further supply of eggs. The young larvæ fed until the autumn on Polygonum aviculare, when they began to hybernate, having attained a length of half an inch, and being of average thickness in proportion. Head a little broader than the 2nd segment, rather flattened and slightly notched on the crown; body of nearly uniform width, but tapering very slightly anteriorly; skin very finely, but almost inconspicuously, ribbed transversely; ground colour pale olive-brown; head brown, marbled with gray; medio-dorsal stripe very indistinct; on the anterior segments it is composed of a very fine double line, darker than the ground colour; these lines conjoin and become darker, and more conspicuous posteriorly, forming a distinct black stripe on the 10th, 11th, and 12th segments; there are also four square black marks at equal distances apart on the dorsal surface, each of which is divided into two equal parts by the medio-dorsal line; the sub-dorsal lines are brownish gray, and the spiracular lines gray; ventral surface olive-green, thickly variegated with darker, and having two almost imperceptible dark green central lines. In other specimens the belly is grayish in the centre, gradually becoming darker as it approaches the spiracular region, where it is smoky black. When at rest the food-plant is grasped by the claspers, and the head curved inwards.—*Geo. T. Porritt; Huddersfield, September* 15, 1871.

Entomological Notes, Captures, &c.

Argynnis Lathonia at Ipswich.—On the 11th of September I captured a fine specimen of Lathonia, near Ipswich. —*C. F. Long.*

Argynnis Lathonia near Ipswich.—Last week a most beautiful specimen of A. Lathonia was captured in a clover field about three miles from here, which I now have the pleasure of possessing.—*Edward F. Bisshopp.*

Variety of Argynnis Euphrosyne.—On Whit Monday I captured a splendid variety of Melitæa Euphrosyne in fine condition: the upper side of the wings is suffused with black; the silver spots on the under side of the inferior wings are continued in lines to the base of the wing.—*James Parsons; Currier's Lane, Ipswich, July* 13, 1871.

Limenitis Sibylla.—I drove to Doles Wood, near Hurstbourne Tarrant, yesterday, and took about a dozen Limenitis Sibylla, but all very much rubbed; quite three weeks too late for this species: wanted them for my friend Mr. Wells, at Kensington. Saw scores.—*Henry Reeks.*

Varieties of Limenitis Sibylla and Argynnis Paphia.—I have had the good fortune to take three of the black variety of Limenitis Sibylla this year, and a good variety of a male Paphia, very similar to the one figured in 'British Butterflies.' I may mention Mr. Farn has seen the latter, and thinks it a very good one; but it is, I am sorry to say, not perfect.—*Edward F. Bisshopp.*

Thecla W-Album at Bristol.—T. W-Album has occurred in tolerable plenty the last two seasons in the larval state, feeding on wych elm, at Coombe Glen, Bristol.—*F. D. Wheeler; 2, Chester Place, St. Giles, Norwich, August* 11, 1871.

Larva of Argiolus.—While reading the account given in your 'British Butterflies' of the life-history of Argiolus, it occurred to me that the following particulars might be worth noting. I find on referring to my journal, that while beating ivy for moths at Bristol, in the autumn of 1869, I took, on October 9th, one larva of P. Argiolus, and, on October 11th and 13th, two more, all of which turned to pupæ November 1st to 3rd, and in that state passed the winter. One of them died; the other two emerged in April, 1870. Again, in September last year, I took another small larva on ivy, at Norwich, which, however, died before arriving at maturity. I think this tends to prove the existence of at least two broods in the year, which is rendered more probable by the freshness of the April specimens, very different from what we should expect in hybernated insects. Both my bred specimens were females, and both crippled in the hind wings.—*Id.*

Lycæna Salmacis in Berwickshire—Berwickshire seems to be a pretty good county for butterflies and moths, but being a beginner, and having little time at command, I have made, as yet, comparatively few captures. On Monday the 10th, however, having a half-holiday, I captured what I thought to be Artaxerxes, having heard that it occurred in the neighbourhood, but which I find on looking up to be Salmacis, having the scalloped bar on the upper wings, and wanting the central spot on the under wings. I saw one specimen of Blandina, which I failed to capture; while I caught five specimens of Aglaia in grand condition.—*F. Burder; Dunse, July* 19, 1871.

Leucophasia Diniensis at Witherslack.—I had forgotten to note that early in August I took a fine specimen, at Witherslack, of Leucophasia Diniensis, said to be a variety of Sinapis; this is the first specimen known in the North of England. In the middle of July Adippe and Hyperanthus were out in the woods at Grange; and in the middle of August Blandina was in plenty under Whitbarrow, Ægeria and Rhamni not rare. I see Photedes captiuncula is noted as a new locality at Whitbarrow; in 1864 I took ninety-six specimens one afternoon, at Whitbarrow, and recorded it at the time.—*J. B. Hodgkinson.*

Pieris Daplidice at Dover.—A specimen of Daplidice was taken near here about a fortnight ago, by some young gentlemen staying at Dover.—*E. White;* 11, *Clarendon Place, Folkestone Road, Dover.*

Pieris Daplidice at Brighton.—Mr. Swaysland, the well-known naturalist of Brighton, informs me of the capture of a specimen of Pieris Daplidice. One day, towards the end of August, a boy passed his shop with a butterfly in a net, alive, which he said was "only a white 'un." Mr. Swaysland, however, detected its species, and purchased it for a small sum.—*Edward Newman.*

Pieris Daplidice near Brighton.—A large female specimen of P. Daplidice was caught at Bevingdean, near Brighton, on the 27th of August last. The insect is in my possession; it is in good condition, with the exception of a slight chip on the hind margin of one of the fore wings.—*H. Goss;* 8, *Goldsmid Road, Brighton, September* 16, 1871.

Sphinx Convolvuli near Droylsden.—I have a female specimen of this species in fair condition, full 4¾ inches in expanse, taken on the 16th of August, by a labourer, on the railway slope near Droylsden Station.—*John S. White; Droylsden Lane, Droylsden, near Manchester, August* 21, 1871.

Chœrocampa Celerio at Southport.—A specimen was caught at Southport on the 17th of July, and was sent to me. It is perfect, with the exception of one of the fore wings, which is broken at the tip.—*E. Bell; 'Science Gossip,' September* 1, 1871.

Deiopeia pulchella near Scarborough.—On Monday last, the 11th of September, on Raincliff Moors, I took a very beautiful little moth; and, after very careful inspection, we find that it most precisely agrees with the description and figure of Deiopeia pulchella in your book. It rose at my feet from heather, and flew very slowly. Time, a little after 10 A. M.—*Richard Beck; Oliver's Mount School, Scarborough, September* 14, 1871.

Deiopeia pulchella at Middleton.—I have in my possession a very fine female in good condition of this very rare insect, captured on the 8th of September, in the railway canal-yard, Middleton Station, by one of the workmen employed, who boxed it for mere curiosity, being attracted by its beauty.—*John Thorpe; Church Street, Middleton, Manchester, September* 19, 1871.

Deiopeia pulchella at Ipswich.—I have this year been fortunate enough to capture (on the 11th and 12th of September) three specimens of Deiopeia pulchella: one at rest on French marygold, and two others brushed up, by accident, out of a bed of Jacobeas; all three were taken without a net. Their flight was heavy, and very similar to the commoner varieties of footman. This is, I believe, the first capture of the insect in Suffolk.—*C. F. Long; Medical Superintendent, Ipswich Borough Asylum.*

Deiopeia pulchella at Dover.—The gentleman whom I have mentioned as having taken Daplidice, also captured a splendid specimen of Deiopeia pulchella, on the beach here, on the 5th September. I have seen the specimen, and it is really beautiful.—*E. White;* 11, *Clarendon Place, Folkestone Road, Dover.*

Deiopeia pulchella near Brighton.—On Monday last a female specimen of D. pulchella was taken in a stubble field, near the Brighton race-course, and was brought to me alive a few hours afterwards by its fortunate captor. I have had the pleasure of adding this insect to my collection.—*Herbert Goss; September* 16, 1871.

Deiopeia pulchella at Brighton.—On the 10th inst., between Black-rock and the race-course, in a stubble field, I saw a fine specimen of the above rarity taken by a gentleman living at Brighton. No doubt a hedge-stake, or something nearly as bad, would have gone through it, had I not been there. I had the pleasure of pinning it for him. Later in the day, in an adjoining field, I saw another specimen settled on the ground; I disturbed it, however, and it rose, and, there being a very strong wind at the time, it was soon blown out of sight. The wind had been blowing strongly in from the sea all day. I cannot say if this had anything to do with the blown-over theory.—*T. N. Hoey; 8, Staveley Road, Peckham, S.E., September* 11, 1871.

Deiopeia pulchella at Hove and Brighton.—On Monday morning, September 4th, while crossing a stubble field in the parish of Hove, and about three-quarters of a mile from the boundary of the parish of Brighton, I caught a very fine specimen of D. pulchella, so perfect and bright that it could not have been long out. Before killing and setting the insect it was shown to several entomological and other friends. Time of capture, 10.15 A.M. Last evening my friend, Mr. Goss, brought Mr. Gorringe, of Richmond Buildings, to show me a specimen he had taken that afternoon, about 3 o'clock, on the Race Hill. It was alive, but somewhat rubbed.—*T. W. Wonfor; 38, Buckingham Place, Brighton, September* 12, 1871.

Deiopeia pulchella at Brighton.—Mr. Swaysland, of Brighton, informs me that Mr. W. Price, 4, Tranquil Vale, Blackheath, took a splendid pair of Deiopeia pulchella near that town; one on the 11th, and the other on the 12th of September.—*Edward Newman.*

Deiopeia pulchella at Ventnor.—On Saturday (September 2) I had the pleasure of capturing a specimen of Deiopeia pulchella in most perfect condition, on the green in front of Devonshire Terrace, Ventnor.—*J. T. Sarll; Beauvoir House,* 34, *Englefield Road, N.*

Deiopeia pulchella at Lulworth.—I captured two specimens of this insect at Lulworth, on the coast of Dorsetshire, on the 11th September.—*A. F. Buxton; Stanstead Abbots, Hertfordshire.—'Field.'*

Deiopeia pulchella at Swanage.—It may be interesting to you to know that I took a fine specimen of Deiopeia pulchella on September 1st, flying in the sunshine, in a meadow near Swanage, Dorsetshire.—*H. Stafford Gustard; Newport, Monmouthshire, September* 2, 1871.

Deiopeia pulchella at Plymouth.—This morning I captured a fine specimen of the crimson-speckled footman, Deiopeia pulchella. On entering my garden, not thinking of insects, I observed an apparently white moth, as the markings were not to be seen, start rather wildly from a plant of the Heliotrope, and, after flying somewhat swiftly for about twenty yards, alight on the flowers of another plant of the same species, passing by all the other flowers in its way. At first sight it looked like a small white butterfly, but from something in its manner of flight and general appearance, I at once saw it must be different; then, approaching cautiously, I, at a glance, detected what it was, rushed into the house for my net, and captured it. I afterwards took it alive to Mr. G. C. Bignell, who killed it, and is going to set it for me. When settled on a plant it looked very long and narrow, with its wings, I think, curled round the body, giving it much the appearance of a large grass-moth. From what I could observe of its habits in so short a time, I think it prefers the flowers of the Heliotrope to those of any other garden-plant, and is a rather wild or wary species.—*J. Gatcombe; 8, Lower Durnford Street, Stonehouse, Plymouth; September* 8, 1871.

Deiopeia pulchella in Cornwall.—I have had the good luck, yesterday (September 14th), to obtain two specimens of Deiopeia pulchella, one of which I captured, and two others were taken by a young gentleman here; the place of capture was a potato-field, in which the potato-stalks are all dried up, but there is a dense mass of Convolvulus arvensis and chickweed. I should suppose that either the Convolvulus or the chickweed is the food-plant.—*Stephen Clogg; East Looe, September* 15, 1871.

Deiopeia pulchella near Bristol.—I have much pleasure in recording the capture of a fine male specimen of Deiopeia pulchella, on the 10th of September. It was taken by my mother (an old entomologist) in a garden, at Bishopston, near Bristol. It is in very good condition, although taken much later in the year than the date you assign for it in your book on moths.—*J. B. Jarvis; Hill Cottage, Brixton Hill, September* 20, 1871.

Deiopeia pulchella in Monmouthshire.—Since writing to you last I have taken another specimen of Deiopeia pulchella in Monmouthshire; it was flying in the sunshine.—*Stafford Gustard; Monmouth.*

Callimorpha Hera near Exeter.—An event of so unusual occurrence as a visit of C. Hera deserves to be recorded. On the 14th inst., about 9 P.M., when taking my usual evening round to my sugared trees and plants, my attention was suddenly arrested by the sight of something brightly coloured, like a bright purple and yellow-striped petal of a tulip, lying flat on a sugared corymb of Tanacetum vulgare; and, bringing my bull's-eye to bear upon it, it suddenly, to my dismay, moved and took wing: in an instant, however, my net was ready, and the beautiful creature became my prisoner.—*H. D'Orville; Alphington, August* 16, 1871.—*E. M. M.*

[Mr. J. J. Reeve (Zool. 4953) records the capture of a specimen of Hera at Brighton, on the 5th September, 1855. It is now in the cabinet of that eminent entomologist, Mr. Henry Cooke, of Brighton; and Mr. Wonfor records (Entom. iv. 213) the capture of a specimen at Brighton, in the autumn of 1868. Several other captures have been mentioned; but we have now three well-authenticated instances.—*Edward Newman.*]

Nemoria viridata.—I have been in the habit of taking this species for the last twenty years; and, in reading your article upon it, I find some slight errors, which it is as well to notice: the larva sent on was reared from the egg, and was one of ten eggs laid by a female taken at the end of May, at Witherslack, Westmoreland; I fed the young larvæ on osier; they readily took to it. As the other nine larvæ all did well, and are now in the pupa, I may as well add that osier cannot be the food-plant of Viridata, as there is no osier where the moth occurs. There is no doubt but the Myrica Gale (the sweet gale) is what the larvæ feed upon. I took twenty-four specimens one day flying during the hot sunshine: there was a high wind up, and it blew several of the moths away into a plantation, but they would not stay in, but came right out into the open heath again. Many specimens are fine as bred, and they partake of both your descriptions, and cannot be two species: the abdomen of the males is tipped with ochreous, females not; the males are more falcate than the females, but in both the costa are concolorous: this species is much rarer than formerly; I seldom get over a dozen in a season; formerly twenty dozen was the number. I once took two fine yellow varieties.—*J. B. Hodgkinson.*

Variety of Venilia maculata.—On the 21st of June last, during a ramble in the New Forest, I took a variety of this insect. It is well known how much the spots on the wings of this species differ both in size and intensity of colouring, but in the variety above-mentioned the peculiarity was quite discernible whilst the insect was on the wing. The two usual spots nearest the base of the wing, and those next to them toward the outer margin, form a band across the fore wing; also the spots on the hind wings are larger and darker than most of the other specimens in my series. I have never yet been fortunate enough to meet with the variety without the dark markings.—*G. Bentley Corbin.*

Sterrha sacraria at Shirley.—I had the pleasure of capturing a fine male of this species, at Shirley, in Surrey, on the 10th inst. It flew in the sunshine, when disturbed, much resembling a Crambite in its flight and manner of sitting on the grass-stems, &c.—*W. E. Davis.*

Acidalia rusticata.—One specimen, evidently this insect, was taken here this month. Another specimen in my collection was probably also captured here.—*H. A. Evans; Tutshill Lodge, Chepstow.*

Acidalia emutaria in the New Forest.—During the summer of 1870 I took two specimens—one in tolerable condition, the other worn—of this delicate little species, in the forest. In my excursions to the forest this season I have not seen it, neither have I heard of any being taken.—*G. Bentley Corbin.*

Acidalia prataria.—You will perhaps like to know that four imagos of Acidalia strigilata (prataria) emerged on Thursday, the 13th July; and others have appeared every day since that date.—*J P. Barrett; 33, Radnor Street, Peckham, July* 19, 1871.

Halia wavaria.—The larvæ found on the black currant were all of a medium grass-green colour, but, on moulting for the last time, the colour was changed to a light reddish brown, the yellow markings appearing darker in tint than they were before. The pupation was under ground, instead of being in a "slight web attached to some of the leaves," as some authors mention. The first of the moths emerged on July 21st.—*George Sim; Crail, N.B.*

Stauropus Fagi at Ipswich.—Last June a very fine and perfect male S. Fagi was taken at rest on a tree in a wood near here, and it is now in my possession.—*Edward*

F. Bisshopp; Berners Street, Ipswich, September 2, 1871.

Stauropus Fagi in Gloucestershire.—In your last month's number (Entom. v. 320), your correspondent, Mr. Merrin, says he believes that S. Fagi is new to the Gloucester district. I took it fifteen years since in the Beech Wood, near Newnham, Gloucestershire, the only county I ever made a capture in: they were resting upon the trunks of the large beech. I consider the Forest of Dean the best collecting district anywhere between the Speech House and Lydney; there are endless varieties, and generally plentiful. In this district there is nothing doing, in consequence of the continual rain. Myrtilli would be plentiful could we only have a day's sun; but when the weather is so bad the specimens captured are generally in very bad condition.—*S. Bradbury; Cheadle, Staffordshire, July* 15, 1871.

Acronycta Alni, Sphinx Convolvuli, and Deilephila Galii.—Last week my son Harry found a larva of Acronycta Alni close to my house, at Huyton; the same evening it made up amongst some pupæ of A. caja I had in the same breeding-cage. The next day Percy Capper found another, which has also made up in the same way. We have searched well but can find no more. I do not know that either the larva or moth has ever before been recorded in this locality. A working man brought me also a fine specimen of Sphinx Convolvuli, taken in the neighbourhood. I have bred a dozen fine specimens of D. Galii this season; I took the larvæ last year on the sand-hills at New Brighton.—*Samuel James Capper; Huyton Park, near Liverpool, Aug.* 29, 1871.

Leucania albipuncta near Canterbury.—At a quarter past one on Wednesday morning I captured a fine specimen of Leucania albipuncta at sugar, to all appearance fresh from the pupa.—*George Parry; Church Street, St. Paul's, Canterbury, August* 16, 1871.

Leucania albipuncta at Canterbury.—Since I wrote you last I have had the good fortune to take three more L. albipuncta; one on Friday night and two on Saturday night, August 18th and 19th; and, strange to say, neither of them was taken till past midnight. I have shown them alive to two gentlemen entomologists here; and one I have sent to Mr. Harper alive.—*Id.*

Leucania albipuncta.—I have sent you a specimen of L. albipuncta alive, if you think it worth accepting, taken last night (September 4th), in Blean Wood, which makes ten specimens since August 20th, and nearly all in fine condition. —*G. Parry; Church Street, St. Paul's, Canterbury, September* 5, 1871.

Leucania putrescens, &c., at Teignmouth.—Since I last wrote I have taken six specimens of Leucania putrescens, and one each of Agrotis obelisca and Stilbia anomala. Nothing will come to sugar this season.—*Arthur. W. Callender;* 15, *Powderham Terrace, Teignmouth, August* 29, 1871.

Heliothis armiger at Liskeard.—Heliothis armiger was taken here last week.—*Stephen Clogg; East Looe, Liskeard, September* 26, 1871.

Catocala Fraxini at Cosham.—I have taken this month, at sugar, a splendid specimen of Catocala Fraxini. It is much larger than the one you have figured in your 'British Moths.'—*George Taylor; Bloomfield House, near Cosham, Hants, September* 26, 1871.

Catocala Fraxini.—I captured a very fine specimen of the Clifden nonpareil (Catocala Fraxini) in the Zoological Gardens last Tuesday, September 12, about eight in the morning. It was resting on the trunk of a beech tree, about six feet from the ground.—*Arthur Thompson; September* 15, 1871. —'*Field.*'

Profusion of Mamestra Persicariæ.—I don't know whether it is the same elsewhere, but about this part of London there is an extraordinary, and I think unusual, abundance of the larvæ of Mamestra Persicariæ. There is at the back of a row of houses, in which our own is situated, a field enclosed on all sides by walls. On one side of this, against the wall separating the gardens of a street at the back of Camden Road from the field, there has gradually, during the last three years, sprung up an accumulation of wild plants, such as Chenopodium, burdock, dock, thistles, &c., and amongst these every year the larvæ have occurred in small numbers, but I have never had more than half a dozen at once. This year, however, the numbers of the larvæ are really extraordinary: they swarm on almost all the plants, but especially on burdock, Chenopodium, and another plant which, I think, is

Atriplex. They are also very common in our own garden; off one gooseberry-bush I took above three dozen full-fed ones. I have taken altogether over two hundred, and might have numbers more if I searched for them, for every evening that I have done so I have taken them in numbers varying from twelve to sixty. I notice that all those on the gooseberry, the leaves of which are turning brown, were of the brown variety; whilst those on a hollyhock, close to it, were nearly all green. I have also remarked a fact which I do not recollect having seen noticed anywhere; it is that their posture, when at rest, very often resembles that of the larva of Notodonta ziczac, the head and 5th segment being held quite clear of the food-plant, though I have not seen the anal claspers unattached. All my entomological friends and acquaintances about here have taken the larvæ in greater or less abundance, though none have seen so many as myself. Their abundance in the field is probably owing to the fact that most of the gardens in the houses in Camden Road have lime trees in them, the flowers of which tree I have noticed are a great attraction to the imagos; so that they have been attracted there, and then laid their eggs on the plants. This autumn I have also taken, when searching for these larvæ at night, four specimens of Hydræcia micacea, which I have not seen here since 1867. Yesterday evening I took a pair *in copula* on the flowers of dock; the female is a magnificent specimen. In my former communication respecting my New Forest captures, I should have stated that the larva of A. Alni was taken on August 10th, in a wood, near Foxleaze.—*Bernard Lockyer;* 179, *Camden Road, London, N.W., September* 5, 1871.

Xylina conformis.—I have had the pleasure (this day, August 5th) of breeding two splendid specimens of conformis. Eggs were generously sent me by a friend, in the spring: eighteen larvæ resulted. Of these, one died; one I sent to a friend; and the remaining sixteen I was fortunate enough to bring to the pupal state. I hope to make some further remarks on a future occasion.—[*Rev.*] *J. Greene; Apsley Road, Redland, Bristol.*

Dianthœcia irregularis and Acidalia rubricata.—D. irregularis has turned out a complete failure: I have only one, and the Rev. J. Mills only one, turned out of over 100 caterpillars. A caterpillar of A. rubricata has just died full fed.—[*Rev.*] *A. H. Wratislaw; School Hall, Bury St. Edmunds, July* 4, 1871.

Xanthia gilvago, &c., at Epping.—I caught a very fine female Xanthia gilvago at sugar, on one of the lime trees, last night. I was surprised to see it, as I do not think this species has occurred before in the neighbourhood of London. It is rather curious that I also took all the other British Xanthias, except aurago, *viz.*, ferruginea, Silago, Citrago, Cerago, and the pale variety (the Gilvago of Haworth). A. lunosa swarmed, but, as usual, not one male in twenty was in good condition; the tips of the wings appear to be worn as soon as they fly. The females are very scarce. I have only seen seven; five of these I have in boxes to obtain some eggs, if they will deposit them. I took one remarkable female last night: it is very large, and the upper wings are very deep red-brown, with scarcely any markings, except a marginal row of black spots. *Postscript.*—Since I wrote to you I have taken another fine specimen of Gilvago; a male. The first is a female. I also took Calocampa vetusta and a very fine Aplecta occulta. It must be about twenty-five years since I took two specimens of this moth; the one I caught is a female, and I have kept it alive to see if it will deposit any eggs. I have not seen vetusta before for years.—*Henry Doubleday* (*in a letter to E. Newman, dated September* 13, 1871); *Epping.*

[Xanthia gilvago has also turned up at Hoddesdon, where fifteen specimens have been taken by Mr. Horley, and others.—*Edward Newman.*]

Dianthœcia irregularis, Anticlea sinuata, &c.—I do not know whether you have been informed that Mr. Powles, of Ipswich, took two D. irregularis sheltering on pines in the crevices of the bark, in July last. Irregularis caterpillars have not been so numerous as usual; and at Tuddenham, in the usual localities, were scarcely to be found. I have taken only one caterpillar of Heliothis dipsaceus, of which moth Rev. J. Mills and I both reared several specimens from caterpillars taken last year. Mine were all *seed-feeders,* and were fed along with the larvæ of D. irregularis on the seeds of Silene Otites; but they also ate other seeds. But the great capture of this year, in this neighbourhood, has been that of the caterpillars of Anticlea sinuata, of which above fifty specimens have been taken by different people following my directions. Having had a couple of caterpillars given me by Mr. Browne, of Cambridge, and having subsequently swept three more from Galium verum, I watched them carefully, and found that they never touched the flowers of the plant, but fed entirely on the young seed-vessels and their stalk, as soon as the flower was off. I have had three in my sweeping-net at once from Galium verum in this condition. Why is it that A. sulphuralis, A. rubricata and A. sinuata are almost confined to the sandy districts in Cambridgeshire, Suffolk and Norfolk, their food-plants being of far more general occurrence? I conjecture, in answer to this question, that these larvæ are all feeble, and cannot enter the ground where the soil is hard or stiff; hence their selection of a sandy locality. Has the larva of L. grisearia ever been found in a wild state on Erysimum cheiranthoides? I have seen and taken many on Sisymbrium Sophia.—[*Rev.*] *A. H. Wratislaw; School Hall, Bury St. Edmunds, August* 31, 1871.

Polia nigrocincta.—During the past week I have had the pleasure of taking two fine specimens of this insect from my breeding-box.—*R. Kay; Bury, August* 19, 1871.

Butalis cicadella at Weybridge.—On Saturday, the 1st of July, I caught, I may say accidentally, an example of this exceedingly rare British species, on the heath, near Weybridge Station. I believe specimens have been taken by Mr. S. Stevens, but I know not the locality. The original individual was taken at Brandon, in Suffolk, many years since, by Mr. Dunning.—*R. M'Lachlan; Lewisham, July* 10, 1871.—*E. M. M.*

Acentropus niveus.—I have this season discovered a spot for this small, local, and peculiar insect. Strange to say I had not observed it before, though it is not uncommon on several parts of the river. Has this season been an exceptional one for it in its usual haunts? Its flight is one of the most peculiar with which I am acquainted, as it never seems to leave the surface of the water, but swiftly flutters its tiny wings, and, in the dusk of evening, looks almost as if it was *swimming* about here and there. At such times it is only to be got with a water-net; but in the day-time it will be found settled on the under side of leaves, &c., close to the water's edge, when it can be easily boxed. It is truly a *water* insect, as often only its head is above the surface, and when placed in a pill-box soon dies. These facts may be well known to the majority of the readers of the 'Entomologist,' but they will possibly interest a few who are unacquainted with an insect whose position in our list of Lepidoptera has more than once been changed, and whose claim even to the order of Lepidoptera has been disputed.—*G. Bentley Corbin.*

Lepidoptera at Wimbledon Common; June 7, 1871.—I have gone out insect-hunting on unfavourable days in June, yet scarcely remember one to equal the above-named day, when my evil genius led me to the Common, which, despite the Volunteers, is still one of the best spots for insects within a moderate distance of London. The wind fluctuated from north to east, and from east to north; and animal and vegetable life were alike suffering under the continued unfavourable influences. On, or nearly about, this date, I have seen flying, pretty freely, porata, punctata, petraria, clathrata, maculata, strigillaria, pusaria, lactearia, and other Geometræ, which are partial to the underwood which grows in the ravines or hollows. What moths, however, were about at this time kept themselves so closely concealed that they were not to be dislodged even by blows of the beating-stick; and an examination of a long stretch of fence in and about the park produced no Macros, but only a few Tineæ of the commonest species. Larvæ, as far as could be told in a hasty examination, were as scarce as imagos; and, unquestionably, numbers have been destroyed by the chill days and colder nights we have had in May and June. Yponomeuta padella was plentiful, as usual, on the hedges, though backward in its growth. I received a renewed proof of the fact, that in cold weather the ravages committed by larvæ upon the foliage of plants are far more injurious than when the temperature is higher. The hawthorn, in various places, presented a miserable appearance where these larvæ were feeding, not entirely to be explained as being the immediate effect of their jaws, but produced, as I conceive, secondarily, because the vitality of the plant languished under the uncongenial influence of the weather.—*J. R. S. Clifford; 59, Robert Street, Chelsea.*

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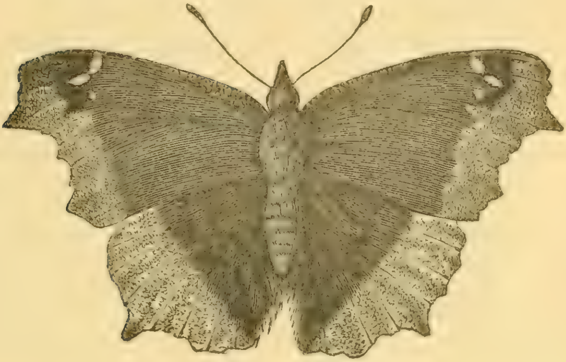
Answers to Correspondents.



VANESSA ANTIOPA (*var.*).

Variety of Vanessa Antiopa.—I beg to offer you an extraordinary specimen of Vanessa Antiopa, thinking you would like to figure it in the 'Entomologist.'—*George Hoadley King;* 190, *Great Portland Street.*

In this beautiful variety of the well-known Antiopa, or white-bordered butterfly, the white border is remarkably broad, and its limits are very indistinctly defined, and scarcely perceptible at the apical angle of the fore wing: it is irrorated with black, and in the hind wings it assumes an entirely different form, the dark and light portions of the wing uniting in an oblique but direct line: the usual series of blue spots within this pale border is entirely wanting, as is the inner of the pale costal spots, so conspicuous in ordinary specimens.

Liparis dispar in Essex.—I believe most entomologists will be interested in the statement as to the occurrence of this species at large in the Essex marshes. The only other recent captures have taken place in the North of England and in Scotland, as recorded in the 'Entomologist;' and in each case only one was seen. If Mr. Button can communicate any further particulars as to the habits of the species, I trust he will do so. I presume that the individuals occurring there are of the typical form, and not the dwarf and dark variety common amongst breeders. Unquestionably the species was once pretty common in many places in Britain; and it is not, seemingly, a delicate species nor a dainty feeder. It is not at all evident why it has almost become extinct.—*J. R. S. Clifford.*

Young Larvæ of Zeuzera Æsculi.—I have never been able to rear these in confinement, nor do I suppose others have been more successful. On one occasion I had an opportunity of observing the hatching of a patch of eggs deposited on a pear-tree. These I noticed particularly did not at once penetrate the wood, but fed for several weeks between the bark and the wood. Unfortunately the loose piece of bark, under which they were living, was accidentally wrenched off, and heavy rain coming soon after, the young larvæ were washed away. This is only a solitary instance, and it might be assumed that something peculiar about the wood of this tree prevented them from at once penetrating it; so I would hardly venture to assert that it is the habit of the larvæ to feed at first in that manner, until it gains strength and size; yet, for all that, it is not improbable.—*J. R. S. Clifford.*

Halias wavaria.—Your correspondent, Mr. G. Sim (Entom. No. 96, p. 416), appears to consider it an unusual occurrence for the larvæ of H. wavaria to undergo pupation under ground. I have had, at various times, great numbers of the larvæ of this moth, and have invariably found that they turn to pupæ under ground, but without forming a cocoon; and, although I have searched for the pupa above ground out of doors in our garden (where, this spring, I captured twelve dozen larvæ in one afternoon), I have never yet succeeded in finding it, and so conclude that it has the same habits at liberty as those it has in captivity. This species appears to be very prolific. As mentioned above, I took, this year, great numbers of larvæ off gooseberry and currant. After that our gardener destroyed many dozens more; and I suppose that numbers must have perished by other means; yet, nevertheless, the moths were common, and I observed them continuously from about June 20th to the end of August. (I hope no one will accuse me of helping to exterminate the species, for I must mention that I took as many larvæ as I had room for, to save them from death at the hands of the gardener above mentioned, and set at liberty all the moths I did not require for my own series. The larvæ proved much infested with ichneumons.) The curious part of the matter was, that the larvæ were almost exclusively attached to two gooseberry-bushes, which are trained against the wall of the house, and grow out of the gravel-walk, so that it must be, I should think, a difficult matter for them to bury. These two bushes they entirely defoliated. There are several other gooseberry- and currant-bushes in our garden, but there were comparatively few larvæ on them.—*B. Lockyer; 179, Camden Road, London, N. W., October* 5, 1871.

Moths and Sugar.—With reference to Mr. G. B. Corbin's communication as to "moths and sugar," I may state that at one time I was in the habit of sugaring every fine evening throughout the summer, in the woods, near here. I have often kept females, captured by this means, in order to obtain eggs, and have seldom found difficulty in obtaining them. In fact, I have generally found that if the insect was left in a pill-box for one evening eggs would be deposited. As to the eggs when laid not producing larvæ, I have, at this time, part of a large brood of young larvæ of Noctua festiva, produced from eggs laid by two or three females of that species, captured by me at the end of last June, at sugar. And, besides these, I have, at various times, obtained eggs of several other common Noctuæ, taken at sugar, all of which have hatched in due course.—*B. Lockyer.*

Chelonia caja.—I had about two hundred eggs of C. caja (from the same moth), which hatched about the end of July. I am sorry I did not keep the exact date. They were all fed on the same plant (dock), but I soon found about fifty grew much faster than the others; these have continued increasing in size, and some have begun to spin. If it is of any interest to you, I will let you know if the chrysalids change this year.—*Miss E. Bethell; 54, High Street, Croydon, September* 11, 1871.

I am much interested in this subject, and shall greatly value farther details. Please, therefore, inform the readers of the 'Entomologist' when the moths come out.

Thomas Parmiter.—I regret my inability to make out the name of the moth you have so minutely described. Could you trust it to some safe hand when you are sending to London?

Larva of Phibalapteryx aquata.—M. Berce has discovered, in the Forest of Fontainebleau, the previously unknown larva of this very interesting geometer. He has succeeded in rearing it, and has thus obtained specimens in the highest state of perfection. It feeds on Clematis Vitalba, and not on Juniperus communis, as was supposed: it is found in May and July, and may be looked for in England.

Eyes of Insects.—Dr. Pouchet, residing at No. 1, rue Hautefeuille, Paris, is desirous of comparing the highly-developed eyes of certain insects with those of insects having simpler eyes, while they are merely in a rudimentary state; and he will be obliged for living specimens of blind insects, remitted by post in damp moss, together with information respecting the places they inhabit.

Moths and Sugar.—Under the heading of "moths and sugar" your correspondent asks certain questions, to which you invite a reply from either of your correspondents, the Rev. J. Greene or Mr. Doubleday. As I had taken pen in hand without noticing your *special* invitation, I venture still to give my opinion and experience. 1st.—As to the greater frequency of *males* than *females* at sugar. Allow for the generally somewhat later date of emergence of the latter sex, and I am of opinion that of many species there will not be much difference in the number of captures of the two sexes. The greater sluggishness or (to be more polite) inactivity, and the domestic duties of the females of some species, will account for their discrepancy in numbers at those convivial gatherings, at which the males assemble in such force. The letter of Mr. Doubleday to yourself, contained in the same number, indirectly answers the latter question as to eggs. I can attest to the same fact, having frequently obtained eggs, and hatched larvæ from the same, from moths captured at sugar.—[*Rev.*] *E. H. Eyles; Enfield, October* 6, 1871.

Caterpillar of Goat Moth.—A boy has just brought me a caterpillar of the goat moth; and neither in the 'Entomologist' nor in your book on moths can I ascertain *the exact* treatment. Last year I had two, which I put under a bell-glass with some pieces of willow; but they both died. I should, therefore, esteem it a great favour if you would kindly inform me how I shall be best able to preserve it.—*Arthur du Moulin; Rusina Villa, Leamington, October* 3, 1871.

The bough or block in which the larva is feeding should be sawn off and covered with muslin. If you then leave the block alone until next June the moth will come out, and the muslin will prevent its escape.

Slug Larva of the Pear.—The enclosed "slimy grubs," larvæ of insects I do not recognize, have been sent me for information. They have suddenly appeared on some pear-trees, and are doing great harm; they eat off the green surface of the leaves, allowing the lower cuticle to remain intact. Can you inform me their name and the perfect insect?—*Egbert D. Hamel; Bole Hall, Tamworth, August* 21, 1871.

It is the larva of a sawfly of the genus Blennocampa, and has been most injurious to the pear-trees in the south of England during the present summer. My friend Mr. Birchall, and several other correspondents who have sent these slimy grubs, will kindly accept this answer.

Variety of Polyodon.—On the 29th July, in the evening, I captured, in the waiting-room at Willesden Junction, a very dark specimen of Polyodon. The upper wings are very dark brown, nearly black; but the usual W is very distinctly marked. Is this dark variety at all common near London?—*William Wells, jun.;* 12, *Phillimore Terrace, Kensington, August* 29, 1871.

I have never seen one of the dark specimens taken near London.

Variety of Zygæna Filipendulæ.—I paid a visit to Caterham Junction the first week in this month (August), and found Filipendulæ in great abundance there. Among the many I took one male, in which the spots on the fore wings and the under wings are of a bright yellow, instead of the normal crimson colour. Is this abnormity at all rare?—*W. Wells, jun.;* 12, *Phillimore Terrace, Kensington.*

This variety is by no means very uncommon, but I have never taken a specimen, and should much value it.

Chelifer cancroides.—By this post I forward you a singular little animal, which I found clinging to a common house-fly. Whether it had fixed itself to the body or legs of the fly I am unable to say, as it dropped off before I could notice. Can you tell me its name, or any of its habits? I never recollect seeing it before.—*Edward F. Bisshopp; Berners Street, Ipswich, September* 4, 1871.

The little animal is Chelifer cancroides.

Gall on the Poplar.—The swelling on the leaf-stalk of the poplar, sent me by Mr. E. A. Fitch, is caused by a plant-louse, Aphis bursaria; if it is opened the interior will be found to be nearly filled with these insects. These monstrosities are very common just now.

Argulus foliaceus.—The fish parasite, sent by Mr. Fitch, is Argulus foliaceus, already figured at p. 351 of the 'Entomologist.' Mr. Fitch has observed that gold-fish dash about to avoid their attacks, and that when the Argulus has once fixed itself they immediately sicken, and eventually die.

Gall in the Bramble.—Mr. Walker has seen the bramble-gall, sent by Mr. E. A. Fitch; and the insect which has emerged he pronounces to be parasitic, and of the genus Eurytoma. I am unable to give you the name of the gall-maker, but hope to ascertain.

Cocoon of Orgyia antiqua.—The mass of eggs, sent by Mr. Wrench, is laid by the apterous female of Orgyia antiqua (the vapourer moth), which, after leaving the chrysalis, crawls on the outside of the cocoon, receives impregnation, and lays its eggs in this regular manner. After which it perishes, I believe, never leaving the exterior of the cocoon.

Orgyia pudibunda.—On the 24th of May last I took a female pudibunda: she deposited a large number of eggs, which were good hatchers. On the 16th of August they spun up: and on the 26th of same month the perfect insect made its appearance; and since then about a dozen have come out. I don't know whether this is a common occurrence; but the books say the following May, after spinning, is the time to expect it.—*E. Earl; Newcastle, Staffordshire, September* 25, 1871.

I have not met with such an instance. Will correspondents kindly favour me with their experience?

Fungus on Pear-trees.—The curious malady which is described as injuring the pear-trees at Saffron Walden is the result of a parasitic fungus, named Rœstelia cancellata. The Rev. M. J. Berkeley, to whom the question has been referred, recommends picking off the infected leaves and burning them,—a slow and most wearisome process; but I know of none better or so effectual. I have this year received specimens of the same genus of fungus on the twigs, leaves and fruit of the whitethorn; on the leaves and fruit of the medlar; and on the fruit of the mountain ash. A valued correspondent has remarked, that the ravages of this genus of Fungi seem confined to Rosaceous plants. I am well aware that this subject does not strictly come within the scope of the 'Entomologist,' but the specimens having been sent me under the impression that they were the work of an insect, I could not hesitate to notice them. The effect of this parasite on the whitethorn is very curious: it causes the twigs to swell and curve, and assume the appearance of the larvæ of Lepidoptera and other objects. It is difficult to conceive any growth more grotesque than some of these fungus-galls, which I gathered this year in the neighbourhood of Croydon.

Squirrels eating the Woody galls of the Oak.—Mr. H. B. Murray informs the readers of the 'Field' that the galls in question—which are produced by Cynips lignicola, as I pointed out many years ago in the 'Zoologist'—are opened by squirrels, and not by titmice, as I always supposed. He says:—"I have myself seen the ground under the oak-tree strewn with the fragments of these galls, and there could be no doubt of squirrels being the operators, as they were seen in the act." It would have been rather more satisfactory had Mr. Murray been able to write that he *himself had seen* the squirrels eating these galls, instead of saying "*they were seen*" in the act; the expression has a want of precision that the writer might possibly be able to remove. I rather infer that he has not himself seen them. I have examined most critically hundreds of these galls at Croham Hurst, near Croydon, with the express object of ascertaining what creature really did attack them; and although there are evident marks, as of the beak of a bird, in many of them, and symptoms of having been forced or broken open in others, there certainly was no indication of a rodent having been at work in a single instance. It is true that, at the time this searching investigation was made, I had neither read nor heard of the squirrel being supposed to feed on these galls; my object being to discover whether they formed any portion of the food of the field-mice, which abound in that locality; but not the slightest trace of the teeth of a mouse could be found.

Larvæ of a Eupithecia.—I send you by this post some caterpillars I found on the seeds of umbelliferous plants, and shall be glad to know their name.—*William Talbot; Tarbert, October* 3, 1871.

The larvæ are those of Eupithecia absynthiata, so far as I can make out; but they will not come out until next year.

Larva of Odontopera bidentata.—I send you a larva, which my nephew found attached by its anal claspers to a branch of one of the forms of Rubus cæsius. I took it to be one of the Boarmidæ; but, upon referring to your 'Moths,' I could not find any description exactly agreeing with it. You will observe that it is a capital imitation of a piece of stick, about the size of a tobacco-pipe, and two inches in length; it also has the appearance of being covered with lichens, resembling some growths of Parmelia pulverulenta, intermixed with Pertusaria, and variegated with darker markings.—*Henry Reeks; East Woodhay, Newbury, October* 3, 1871.

The larva is that of Odontopera bidentata: this beautiful variety, so totally different from the ordinary form, is said to be generally found on lichens. It is singular that the larvæ of this species should feed all the summer the moths appear, and I have some of them feeding up to the present time on clematis and lilac: most of them are now gone into the earth.—*H. Doubleday; in a letter to E. Newman.*

EDWARD NEWMAN.

Life-history of Gymnancycla canella.—The egg is laid in July and August, on the flower-bud of Salsola Kali; and the young larva emerges in confinement in about eight days. Whilst young it enters the unripe seed-vessels, and feeds upon the seeds; but when the capsule becomes too small for its dwelling, it bores into the stem of the plant, feeding on the soft interior, the entrance to which it covers with a close net-work of silk, where it ejects its frass. It leaves the hollow of the stem at times to feed upon the seeds of the plant, but wriggles back into it on the least alarm. When full fed it is about eight lines long; rather attenuated; head and 2nd segment small; 3rd segment stoutest of all: from this it tapers gradually to the anal extremity. The skin is in loose folds along the spiracles; crown of the head pale brown; cheeks black; body light green above, paler beneath; dorsal line darker, distinct; subdorsal lines broad, dark green, sometimes reddish brown. On the 3rd and 12th segments are two distinct ocellated spots, black with a white centre, from each of which grows a stiff bristle; also on each segment are several minute black dots. The larva spins for itself under ground a close cylindrical silken cocoon, mingled with grains of sand; and in this it changes to a pale delicate-looking pupa. The imago does not emerge until July, thus remaining in the pupa state nearly ten months. I have never taken the imago on the wing, but the larva is not rare at times on the Salsola in this district, and its presence, when young, may be easily detected by the withered appearance of the tops of the stems, and, when more mature, by the small webs full of frass and sand. The early part of September is the best time to search for it, and I have no doubt that it will eventually be found wherever its food-plant abounds. *N.B.*—The collector, if thin-skinned, should be armed with a pair of scissors or strong gloves, as the armature of the leaves makes painful punctures. To non-botanists I would say the Salsola resembles most a furze-bush growing out of the bare sand.—*Henry Moncreaff; September* 21, 1871.

Notes on Oak-apples.—The plan of creation requires a continual appearance and disappearance of material existence. Each form of life is from dust; and having performed its part, or completed its circle, returns to dust, which is again gathered up into new creatures; and these numberless and ever-varying circles constitute the great round of existence, and the whole work is preserved in order by the control which the parts exercise upon each other. The oak-leaf falls and returns to dust, which serves for the growth of the oak, and, in process of time, is developed again into leaves. In other cases the circle of existence is less simple, and two circles of life are combined; and some part of the substance of the oak-leaf is transformed into oak-spangles by means of a gall-fly. In the oak-currant the circle is more complicated, for not only gall-flies, but also parasitic flies take part in the work. In the oak-apple the arrangement is far more intricate, for very numerous kinds, perhaps one hundred in number, representing all the chief orders of insects, are occupied in it; and it is not only inhabited by insects, but is also frequented by Acari or mites, whose chief dwelling-place is wood-moss, where the species of Bryobia, Zetes, Tydeus, Iphis, Murcia, Nothrus, Oribates, Pelops, Penthaleus, Hoplophora, Eumæus, Erymæus, Caligonus, Carabodes, Celæno, Cepheus, and the more elegant Eupodes and Linopodes abound; and British Entomology is in need of a book on these wood-moss mites; and oak-apples afford abundant materials for another volume. Teras terminalis, by means of its punctures and egg-laying, is the means of forming the oak-apple, which supplies its offspring with board and lodging; but numerous enemies appropriate to themselves the bodies, or the food and habitation, of this offspring; and other kinds avenge the Aborigines by consuming their invaders. Some kinds inhabit the oak-apple for two months; one species lives a year in it; and the successive generations of this fly pass from oak-apple to oak-apple. But the life-history of the other kinds requires to be traced for ten months elsewhere. Each oak-apple is tenanted by many individuals of the Teras, and there is much to be observed as to how the grubs are distributed through the oak-apple during its growth, and in noticing the successive arrival of other species, which find their way into the oak-apple, or insert their eggs therein. In conclusion I will mention two or three oak-apple insects, in addition to those which I have previously noticed. Lampronota Segmentator:—this is probably a parasite of Pœcilochroma corticana (Fam. Tortricidæ), a moth that frequently emerges from oak-apples. Psylla ——: —I have not yet ascertained the name of this species; it has a very close resemblance to P. Buxi. Anthomyia pluvialis:—another species of this genus, A. canicularis, has been reared from the cottony oak-gall, the habitation of Aridricus Ramuli.

Eulophus Gallarum is frequent in these two galls.—*Francis Walker.*

Number of Claspers in young Noctua Larvæ.—In No. 56 of the 'Entomologist's Monthly Magazine' (for January, 1869), Dr. F. B. White records some notes made by him on various Scotch Lepidoptera. It is respecting the first note, regarding the larva of C. exoleta, that I now write. Dr. White remarks, that in rearing this larva from the egg he was surprised to find that, when first hatched, it only possessed three pairs of prolegs [I believe the writer meant claspers], the first two pairs being undeveloped. He also says that he is not aware of any other Noctua larva having the same peculiarity. On reading this note, some two years ago, I was struck with an idea, which I have since devoted some time to working out; and, feeling myself pretty certain as to the facts of the case, I venture to give the results of my experience. They are as follows:—most, if not all, of the larvæ of the Noctuæ belonging to the section Genuinæ have, when first hatched, but three pairs of claspers, the first two pairs being quite undeveloped; they are gradually developed as the larvæ increase in size, and by the third moult they are as large as the other pairs, and fit to be used in walking. Consequently, when first hatched, the larvæ are semi-geometriform, and loop more or less when in motion. To show that I have some grounds for the above opinion, I annex a list of the Noctuæ belonging to this section, which I have reared, or attempted to rear, from the egg:—Leucanidæ, L. lithargyria; Apamidæ, M. Brassicæ and Persicariæ; Caradrinidæ, G. trilinea; Noctuidæ, R. tenebrosa, N. festiva and brunnea; Orthosidæ, T. gothica; Hadenidæ, E. lucipara, H. serena, A. nebulosa and H. Chenopodii; Xylinidæ, X. lithorhiza (this larva is especially geometriform when young, and has the habit of resting attached only by its claspers, with its body held straight out from the surface on which it is resting, after the manner of true Geometræ). Heliothidæ:—I have never yet had the pleasure of obtaining eggs of any of this family; but my kind friend, Mr. H. Bartlett, of Brecknock Street, Camden Road, this year has had eggs of H. dipsaceus, and this family proves an exception to the rule, for the larvæ were, he informs me, true Noctuæ throughout their lives, and never possessed less than the usual number of claspers. Besides the species above-mentioned, I have seen, recently hatched, larvæ of other species of Genuinæ, in the possession of Mr. Bartlett, and they have all shown the same characteristics. If we leave this section, and turn to the second great group of Noctuæ, the Quadrifidæ, we find that the greater part of the larvæ are half-loopers throughout their lives, such as the larvæ of the genera Plusia and Catocala; whereas in the Noctuæ, which are most nearly allied to the Bombycina, the larvæ have always the usual number of claspers, and are also, like the larvæ of Arctia and Chelonia, more or less hairy. The conclusion I draw from these facts is, that Geometræ are, what I think I may term, *undeveloped Noctuæ;* therefore their proper position, instead of being between the Bombyces and Noctuæ, would be somewhere *after* the latter group. Beginning with the Bombyciformes, we find the larvæ having five pairs of claspers, from the egg upwards (T. derasa and batis are, however, exceptions). We then find, in the Genuinæ, larvæ which, on first coming into the world, possess but three pairs of claspers, but which on attaining maturity are possessed of the usual number thereof; and, lastly, in the Minores and Quadrifidæ we have larvæ who are semi-loopers throughout their lives: from these we naturally merge into the true geometers. I merely start this as an hypothesis, and leave it to wiser heads than mine to work out, if they consider it worth while. I should like to have the opinion of some one who has had more experience than I in rearing Noctuæ from the egg; and shall be obliged to any gentleman, who in future may rear any of this family, if he will note whether they possess the characteristics I have mentioned or not.—*B. Lockyer.*

Batoneus Populi: a Mite Injurious to the Aspen in Scotland.—At the end of May last, Mr. George Norman, of Forres, a gentleman well known as an ardent and successful cultivator of Scottish Entomology, kindly sent me a batch of aspen galls, accompanied by a note, that they were growing in vast profusion on Sir A. Gordon Cumming's estate, near Shiel, on the banks of the Findhorn, and that the branches of the aspens were covered with them in all stages of growth. My correspondent also informed me that the aspens were probably of natural growth—quite wild; and, in reply to my inquiry, I learned that none of the galls were seen near to or on the roots. It is the first time that British specimens of these galls have come under my notice, but I have long been acquainted with their occurrence in Bohemia, as detailed by Herr L. Kirchner in the following note, of which I think it serviceable to give a literal translation:—"But the most diversified works I found on the Populus tremula, *L.*, of our woods, at the young shoots of four to five years' growth, amongst which there are, however, individuals nearly twenty years old, and which, from the want of sun continue to vegetate in a crippled state in the thicket of old pine plantations. Most remarkable of all are the gall-like deformations, similar to tuberous growths, which are attached near to the root, and half imbedded in the ground, from the size of a hazel-nut up to that of a man's fist: their outside is of a fine reddish green; their shape and look that of a raspberry (similar deformations are found on the trunk of Populus pyramidalis, perhaps also below, as in this case); their interior full of small cells, nearly one hundred in number, each of which is of the size of a hemp-seed, and is tenanted by ten to fifteen mites in the larval state (Batoneus Populi, *mihi*). Only twice I was so lucky as to catch altogether five old females, which were just busy [laying?]. This gall formation, which is quite peculiar in construction, and which is undoubtedly the work of a mite still undescribed, I have subsequently found on eleven different crippled shoots, always only near the root, fixed to the bark, half above ground, and half imbedded in it." ('Lotos,' xiii. p. 44.) With the description here given of the Bohemian specimens, my own Scotch ones quite agree in every particular,—in size, colour, and internal structure. I was in particular struck by the rich, downy, reddish green hue of their covering; by the loose granulate texture of the outer layer, which could be easily broken up by hand; and by the fibrous, woody, hard centre, around and within which the numerous cells of the mites were located. In my opinion each of these galls springs from a bud, transformed into a short deeply-imbedded foot-stalk, within which the parent mite had deposited her eggs. Hence, I would not lay any stress on the fact, so much insisted upon by Herr Kirchner, that the galls occur only near the roots. On a future occasion I hope to be able to supplement this notice by an account of the development of the makers of these excrescences. In the meantime I wish to direct the attention of foresters and agriculturists to the fact, how injurious these galls, "in vast profusion," must be to the trees, and what an enormous quantity of sap they must divert from its legitimate channels. Those who value healthy growth I would, therefore, recommend not to use their pruning-hooks tremblingly, like "aspen o'er a brook," but firmly, and mindful of the circumstance, that, if the operation is to do any lasting good, these excrescences should not remain on the ground, but should be collected and consigned to the fire.—*Albert Müller; 'Gardener's Chronicle,'* p. 1226, *September* 23, 1871.

Entomological Notes, Captures, &c.

Orgyia gonostigma and the Volunteers.—The gallant defenders of our country (*in futuro*) are not, I regret to say, the defenders of O. gonostigma, but rather, on the other hand, inimical to its continuance in its Wimbledon haunt. Every year the numbers steadily diminish, partly owing to the oft-quoted cause, "the attacks of collectors," but still more to the disturbance of the locality throughout the summer, and especially during the time when the moths are on the wing, and the young larvæ are emerging; the latter event taking place in about a fortnight after the deposition of the eggs in July. From the character of the ground which forms the habitat of the species at Wimbledon (in the well-known hollows, or "ravines," as they are termed in an old work on Botany), it is not likely to establish itself anywhere else in that district if the Common ceases to be tenable. Gonostigma evidently delights in a sheltered spot; and the caterpillars, unlike those of its near relative, Antiqua, are not particularly inclined to stroll. "Now, here is a clear case," observed a friend to me the other day, who is strong for Darwin and his theories; "no doubt both sexes of Gonostigma had originally wings. Getting to this retired spot, just suited to their tastes, some individuals settled here, and, by and bye, the females got rid of their wings, which they did not need for oviposition." Ingenious hypothesis! But it does not explain why Antiqua, universally common, is also wingless in the female. Moreover, Gonostigma does occur in other localities, which do not, I believe, resemble exactly the ground it occupies at Wimbledon. There are only two, however, mentioned by Stainton, namely, Doncaster and Epping. A circumstance, which is unquestionably adverse to the increase of the species is this, that the larva hybernates, and, as I judge, almost invariably unprotected. The Common in that part is marshy, and at least a proportion of the larvæ are destroyed by the winter rains.—*J. R. S. Clifford.*

Larva of Acronycta Alni, &c., near Newcastle-under-Lyne.—We have had the good fortune to take A. Alni this year, in this neighbourhood. My father beat out three larvæ on August 30th, in Walton's Wood, in this parish. They were all close together; two on oak and one on hazel. They fed up in a few days on oak, and have made up satisfactorily in pieces of hollow stick. Two days after I went again to the same place, but could not meet with any more. We have done pretty well in beating this autumn. Leporina and Dictæa are not scarce; and Dromedarius, Camelina, Falcula, and Lacertula have come down freely. I have bred a fine series of Tiliaria from larvæ beaten from alder; and Xerampelina from a larva taken in the spring, on the trunk of an oak-tree. This was the first of the species that had been taken in North Staffordshire. My friend, Mr. John, of Stoke-upon-Trent, has, however, this autumn, succeeded in taking about twenty imagos on ash-trees, close to the improbable locality of the Potteries. He has also taken a single specimen of C. fluviata, and another of A. Australis, in the same locality. Another member of our Club, Mr. A. Smith, has taken a worn specimen of P. Bajularia this summer, at Swynnerton: this species was not known before to occur here. It would seem that a great variety of species are to be found in North Staffordshire, but that very many are not so abundant as in more favoured counties. We can do nothing at all at sugar this year. Is this borne out by the experience of other collectors.—*Thomas Daltry; Madeley Vicarage, Newcastle, Staffordshire, September* 22, 1871.

Lepidoptera at Witherslack.—On Good Friday I was at Witherslack, and took a fine series of Butalis Incongruella; also specimens of Depressaria Capreolella and Gracillaria

Phasianipennella flying during sunshine; and a number of other species of less note were out. Early in May I took ten specimens of Catoptria Aspidiscana, and found a number of larvæ of Rhodophæa Marmorella, E. Signatana, and E. Messingiella, which have duly come out. About the middle of May I took a dozen specimens of a rare Tortrix, Ephippiphora Nigricostana, in a damp wood, by sweeping; at the same time a fine series of Pterophorus Microdactylus turned up among the Eupatorium Cannabinum, as did also Eupœcilia Rupicola, E. Maculosana, Elachista Humiliella, Apicipunctella, E. Sylvata, and D. Carpophaga from the same locality. Early in June, at Witherslack, I took a fine lot of Adela Fibulella, Micropteryx Salopiella, Penthina Prælongana, P. Verhuellella, D. Saturnana, Plumbana, and Acuminatana; also larvæ of Depressaria Pulcherimella on wild carrot, Douglasella on Campanula, and Nanatella on carline thistle. At Windermere, same week, I took a fine lot of Micropteryx Mansuetella, seemed to be most common among meadow-sweet; I also met with P. Diminutana, Subarcuana, Roxana, Arcuana, N. Myrtillella, Lithocolletis Tenella, Amyotella, Faginella, &c. On Whit Monday I gathered a lot of Genista Tinctoria, from which I bred a fine series of Anarsia Genistæ, C. Wailesella, and D. Atomella; and from Anthriscus Sylvestris I bred two hundred Depressaria Weirella. Early in July I took a fine series of Hyperanthus Humidalis, and specimens of C. Pyrrhulipennella, Limosipennella, A. Dilectella; and set a fine series of Argyresthia Œrariella (*n. s.*), D. Plumbana (*n. s.*), Consortana, Redimitana, P. Brassicana, Uncana, Siculana, E. Fractifasciana, Euchromia Rufana, H. Eluviella, Eudorea Atomalis, Truncicolalis, Muralis, Pyralalis, and Cratægalis. Early in August a fine series of A. Minimellus, Gelechia Senectella, and specimens of Gelechia Similella and Sequax, Asychna Fuscociliella, Zelleria Hepariella, Coriscium Cuculipennella, Penthina Sellana, Marginana and Betulætana, Argyresthia Annulatella, Andereggiella, and a grand lot of Trycheris Mediana, Gelechia Ligulella and Dodecella, Gracillaria Auroguttella, Laverna Miscella, Crambus Falsellus, Pinetellus, Contaminellus, Elachista Consortella, Adscitella, Cerussella, Biatomella, Triseriatella, Obscurella, and am now breeding Depressaria Capreolella from larvæ found feeding on wild carrot in July, and Peronea Aspersana from Potentilla, &c.—*J. B. Hodgkinson; 15, Spring Bank, Preston, September* 2, 1871.

Lepidoptera Captured in the New Forest.—The following are some of the best of my captures during a fortnight's stay, from the 5th to 21st August:—

Argynnis Paphia *var.* valezina. One.

A. Adippe and Aglaia. Not rare.

Limenitis Sibylla. Common; but of course worn.

Melanagria Galathea. One.

Satyrus Semele. In abundance everywhere on heaths.

Epinephele Hyperanthus. Two.

Lycæna Ægon. Abundant on heaths.

L. Corydon. One; taken flying amongst long grass in Rhinefield Sandys enclosure.

Leucophasia Sinapis. One.

Acherontia Atropos. One larva of the olive variety.

Liparis Monacha. Two; one male, one female. The female has laid me a batch of about 150 eggs.

Cleora Lichenaria. One.

Pseudoterpna cytisaria. Abundant.

Ephyra punctaria. Not rare at sugar; also by beating.

Acidalia trigeminata. Three; at sugar.

Selidosema plumaria. Five.

Notodonta dodonæa. One larva.

Acronycta Alni. Found a larva on bramble, which had changed its last skin all but the head; but having been unable to free itself from it, had died of starvation. It could not have been dead long, as all the markings were still distinct, and the colours bright when I found it. I took it on a sloping hill outside Foxleaze, on the Brokenhurst road.

Sugar was not unprofitable: the following were the best captures by its means:—

Cymatophora diluta. One.

Hydræcia nictitans. Two.

Cerigo cytherea. Not rare.

Triphæna janthina and fimbria. Common.

T. interjecta. One.

T. subsequa. Eleven. This came regularly to sugar in one locality, but never in any abundance, three being the largest number seen in one evening.

Cosmia affinis. Five.

Catocala sponsa. Common.

C. promissa. Seven.

Besides the above many commoner insects, such as trapezina, pyramidea, &c., swarmed on all the trees. In order to obtain any number of sponsa I found it necessary to have the sugar on by at least 7.30 P. M., as they, and also promissa, fly directly the sun has set.—*B. Lockyer; Camden Road, N.W., August* 25, 1871.

Lepidoptera bred in 1871.—I shall be obliged if you can find space for this list of Lepidoptera, which I have bred this year:—

N. Chaonia and Trepida. Several: from 28th April to 9th May.

S. Mendica. A fine series, reared from eggs: beginning of May.

T. Rubricosa. Reared from eggs kindly sent me by Mrs. Hutchinson; young larvæ fed freely upon the broad-leaved plantain: from 1st to 18th March about twenty-five moths came out, the largest I have seen.

H. Thalassina. Reared from eggs found on beech, at Loughton, last year: imago, 31st May.

A. Prodromaria. Appeared in my breeding-cages: from 11th March to 12th April.

C. Temeraria. From larva found on blackthorn, at Loughton, in August: 10th April.

T. Extersaria. Five, from larvæ on oak, in August: imagos, 22nd to 31st May.

E. Pendularia. Five, from larvæ on birch, at Rowhill Wood, in August: 17th to 25th May.

E. Rectangulata. Twelve specimens, from larvæ collected on wild apple, at Loughton, in May last.

H. Quercana. Four, from larvæ collected at Loughton, in May: imagos, end of June.

A. Salicana. A fine series, from larvæ on willow, on Hackney Marshes, in May: imagos, middle to end of June.

S. Neglectana. From larvæ on willow, on Hackney Marshes, in May: imagos, end of June.

E. Scutulana. Bred freely from thistle-stems; collected at Loughton, in April.

S. Achatana. Freely from larvæ on blackthorn, at Loughton, in May: imagos in July.

C. Splendana. Ten specimens from acorns; collected at Loughton in autumn: moths now coming out.

L. Smeathmanneana. One moth, on 31st May, from the seed-heads of the knobweed; collected at Rowhill Wood, in August, last year.

L. Dilucidana. A fine series from stems of the wild parsnip; collected during winter.

E. Roseana. Moths now emerging freely from teazel-heads.

L. Dipoltana. Five specimens of this pretty insect, from seed-heads of yarrow; collected at Southend last autumn.

S. Rufillana. From seed-heads of the wild carrot; collected at Southend last year: moths now coming out.

S. Chorargella (Boleti). Bred in profusion from Fungi; collected at Loughton in April.

D. Conterminella. From larva on willow, on Hackney Marshes, in May: imago, 27th June.

C. Bicolorella. Freely from larvæ on hazel, on Hackney Marshes, in June: imagos, July.

C. Viminiella. Freely from larvæ on willow, on Hackney Marshes, in June: imagos, July.

C. Ibipennella. Six, from larvæ on birch, at Wanstead: imagos in July.

C. Therinella. During the winter I collected about seventy cases, containing larvæ of this species, but four only escaped the devouring ravages of the ichneumon.

C. Argentulella. Freely from cases on the seed-heads of yarrow; collected at Southend last autumn: imagos in July;

E. Poella. I have bred this in some numbers from pupæ; collected on Hackney Marshes in spring.—*William Machin; 21, Argyle Road, Carlton Square, Mile End, London.*

Attractive Influence exercised by Females of Bombyx Quercus.—Writers upon Entomology have repeatedly referred to the fascination under which the males of this species are brought by the presence of an unimpregnated female; in fact, the story of "sembling," as put into operation with this and other Bombyces, is one of the stock anecdotes which is made to serve a variety of purposes, being sometimes used to demonstrate that insects possess a mysterious sense, unknown to us. I must own to a measure of scepticism as to some of the particulars related, a scepticism heightened by the fact that I had tried the experiment in vain with a female B. Quercus, in a spot which the species frequented. The emergence of three females, last July, gave me a new opportunity of testing the attractive power which resides in them, though I had to keep them prisoners for some days ere I could take them to a suitable locality. This I was able to do on August 1st, and had sufficient evidence that the very rapid discursive flight of the male Quercus can be brought to a check by the presence of the female. Several eagerly surrounded the bag in which these females were enclosed, almost regardless, for the moment, of the danger to themselves, while others flew round in circles. It was observable, however, that when struck at, if they escaped, they usually took alarm and flew off. Now and then one would sweep up, and, perceiving the position in which the objects were which had attracted him, departed at once, without endeavouring to come any closer to the box containing the prisoners. Apparently, the presence of the male insect is also, in some manner, indicated to the female, for those that were taken out for this experiment, though before that they were quiescent in the day-time, were in a state of agitation, even when the box in which they were enclosed was kept quite still. After 2 P.M. the males, from some cause, ceased to take any notice of the females, though they had not ceased to fly about. The female of Quercus, when impregnated, deposits her eggs with great rapidity, a hundred or more being got rid of in an hour. The whole number are not got rid of in confinement, the stimulus of flight being necessary to remove the whole from the ovary.—*J. R. S. Clifford.*

P. Daplidice and A. Lathonia in Jersey.—These rare insects have been tolerably abundant here this season. The former (of which I have taken thirteen) are only found in one locality, and have been established there these last two years, before which time they were seldom seen in the island. The latter has been taken in several localities, also rather abundantly, having taken sixteen myself, and I know of other collectors equally successful: this, also, is seldom seen.—*J. Piquet; 12, York Street, Jersey, October* 5, 1871.

Sphinx Convolvuli near Stalybridge.—A specimen of

Sphinx Convolvuli was captured in a mechanic's shop at Copley, near Stalybridge, on the 3rd of October, and is now in my possession.—*Mark Kershaw; Hillgate Street, Hurst Brook, Ashton-under-Lyne.*

S. Convolvuli at Highgate.—A fine specimen of this insect was captured at Highgate, on the 7th inst., by Mr. E. Danty, on a public-house window.—*W. E. Davis.*

Zygæna Filipendulæ in October.—Having returned from a hard day's digging, I wish to send you, so that you may receive it living, a specimen of Filipendulæ. I have never seen it before, except in the usual season; nor have I heard, so far as I recollect, of its appearing at this date. I saw it on the wing, and at first quite failed to recognize it at such a time: but soon saw it was a burnet or cinnabar.—*R. F. Towndrow; Woburn Cottage, Malvern, Lincolnshire, October* 18, 1871.

It is a very unusual circumstance to capture Zygæna Filipendulæ in October: it must, of course, be a second brood. It is, apparently, just out of the chrysalis. I am obliged for the specimen.

Deiopeia pulchella Bred in England.—The numerous accounts, which appeared in the 'Entomologist' for last month, of the capture of D. pulchella, remind me that I have often thought it might be worth while recording in its pages the fact that Pulchella has been bred in this country, and that not many years ago. It was, I believe, in 1856 that a gentleman, with whom I have a very slight acquaintance, a good naturalist, but not a collector of insects, captured a female at Torquay, where he was then staying. This female laid a few eggs on the side of the pill-box in which it was taken, and, I believe, fourteen or fifteen larvæ were hatched. How many were reared, and on what plant the larvæ were fed, I do not now recollect; but my acquaintance very kindly sent me a pair of them, which now grace my cabinet. Besides this pair, I also possess another pair, very old and dilapidated, which were taken by the late Dr. Aldridge, of Torquay. Also another, a curious variety, taken some years ago in Lancashire, and sent to me by Mr. J. B. Hodgkinson; and one fine one taken on the Sussex coast, near Hastings, procured for me by the late Mr. Bouchard, about ten years ago.—[*Rev.*] *Henry Burney; Wavendon Rectory, Woburn, Bedfordshire, October* 3, 1871.

Deiopeia pulchella at Folkestone.—I had the good fortune to take a specimen of D. pulchella, at Folkestone, on the 12th September last.—*C. Oldham; Newton House, Amherst Road, Hackney.*

Deiopeia pulchella in Dorsetshire.—Seeing it mentioned in your 'History of British Moths,' that Deiopeia pulchella is a rare moth, I venture to trouble you with the information that I have one which exactly corresponds with your description. It was caught about a month ago by my little son (aged four), on the low-lying shore of Poole Harbour, Dorsetshire, where we have been spending our holidays, and where my boys (this one, and an elder one of six) began to form their little collection of moths and butterflies. The forget-me-not grew plentifully near the spot where it was caught.—*Henrietta J. Hiley; 3, Cambridge Gardens, Richmond Hill, September* 29, 1871.

Anticlea sinuata near Newbury.—At the latter end of June last my friend, Mr. W. H. Herbert, of Wyfield Manor, took a beautiful specimen of A. sinuata. When captured it was found sitting on a nettle-leaf. The land adjoining the spot where the insect was found is barren and sandy, but, in spots, growing an abundance of Galium verum; so that Mr. Wratislaw's conjecture, regarding this and allied species, certainly appears to be correct.—*Henry Reeks.*

Xanthia gilvago at Coombe Wood.—In Mr. Doubleday's letter, published in last month's 'Entomologist,' he says, speaking of Xanthia gilvago:—"I was surprised to see it, as I do not think this species has occurred before in the neighbourhood of London." I beg to inform you that my brother and I took this insect last year at sugar in Coombe Wood.—*H. D. Greville; Southfields, Wandsworth, October* 3, 1871.

A New British Phycis.—During a short stay in the Isle of Wight, last July, I captured a few specimens of a species of Phycis, which I felt certain at the time to be rare in, if not new to, Britain. I exhibited a specimen at the following Thursday meeting of our Society (the Haggerstone); it was not known by anyone present. Mr. Henry Doubleday has seen it, but not named it: he informs me that in all probability it is figured in Herrich-Schæffer. Perhaps you will be so kind as to see what you can do towards identifying it for me.—*W. E. Davis; 36, Worship Street, City Road, October* 2, 1871.

[I propose to call this species Phycis Davisellus.—*Edward Newman.*]

Copris lunaris at Hertford.—A few weeks ago I took a fine specimen of Copris lunaris, under cow-dung, near Christchurch, in the South of Hampshire. I believe it to be a very unusual locality for this beetle.—*H. A. Lucas; Haileybury College, Hertford, October* 16, 1871.

Epunda lutulenta, E. lichenea, Dryops femorata, &c., at Brixham.—Last week Epunda lutulenta was pretty plentiful on ivy here, but in very poor condition. I have had one specimen of E. nigra, from pupa found under moss, but have not seen it at ivy. Lichenea is most abundant, but is now quite worn. Common things in great abundance. If any coleopterist wants Dryops femorata, let him now speak, as it is quite a plague here.—*Edwin Roper-Curzon; Parkham Wood, Brixham, Devon, October* 10, 1871.

Entomology at Longfield Rectory.—Selenia illunaria has proved triple-brooded with me this year, an imago having emerged on the 12th September from an egg laid in July; it was little more than a week in the pupa state. The rest of the larvæ are changing now; it is very similar to the perfect insects of the second brood. During the last week I have taken two specimens of the plain variety of X. Cerago (X. flavescens of Esper). C. Xerampelina was taken here at sugar, on the 7th September. It is quite new to this neighbourhood. That it should be found here at all is scarcely to be expected, as the district is peculiarly dry and devoid of ash trees.—[*Rev.*] *P. H. Jennings; Longfield Rectory, Gravesend, September* 20, 1871.

Captures near Newcastle.—I have nothing of great importance from this quarter to report. N. Elymi has occurred in considerable numbers on the Durham coast, near South Shields, upwards of fifty having been taken by the different members of our Club, at rest on the sand-reed, and flying at dusk. On account of the cold and wet spring and summer—indeed we had no summer weather until the last week in July—the hybernating larvæ were very long in feeding up. I found larvæ of A. caja, scarcely one-fourth of an inch in length, feeding on the coast on the 12th of July; and also an imago (female), during the last week in July or first in August. The common Agrotes,—Tritici, Valligera, Cursoria, &c.,—usually very plentiful on our coast, appeared in very small numbers; probably the larvæ may have perished during the severe wet and frosty weather in May, and even in June.—*W. Maling; St. Mary's Terrace, Jesmond Road, Newcastle-on-Tyne, September* 18, 1871.

Pieris Daplidice near Dover.—I saw a specimen of this rare insect in the possession of a lad, Henry Neall, son of Mr. J. S. Neall, of Croydon, who informed me that he took it on August 25th, at St. Margaret's, about four miles from Dover, as it was resting on a thistle-blossom. It was a male, and in good condition. Should this prove to be a second report of the same capture, you will, doubtless, be glad of the further details I have been able to furnish you with.—[*Rev.*] *Wm. Farren White; Stonehouse Vicarage, Gloucestershire, October* 20, 1871.

Cerastis erythrocephala at Canterbury.—At the beginning of October I took a fine female Erythrocephala near this place; and this day, the 24th, I have just taken another in the same locality; but they are both very pale specimens, quite unlike the six specimens which I took at the same place in October, 1866. The latter were very dark brown on the disk, and pale along the costa; those of this year, I believe, are what is called Cerastis glabra. I have also captured the finest varieties of Aurago I have ever seen; some of them entirely red; others all of one colour, with the band on the hind margin. Also some fine specimens of X. semibrunnea and Croceago. — *Geo. Parry; Church Street, St. Paul's, Canterbury, October* 24, 1871.

Lateness of the Season (1871).—Though in the spring months—in some particular localities, as has been recorded in the 'Entomologist,'—certain species of Lepidoptera appeared sooner than usual (though this was not the case generally in the districts near the metropolis with which I am acquainted), a considerable retardation has since occured. Many species are a fortnight, or even three weeks, after time. It was singular, too, that such species as Zeuzera Æsculi and Sesia Cynipiformis (as I observed in Hyde Park) were considerably delayed, though the larval habits, to a considerable extent, prevent the insect from being affected by changes of temperature.—*J. R. S. Clifford.*

THE ENTOMOLOGIST.

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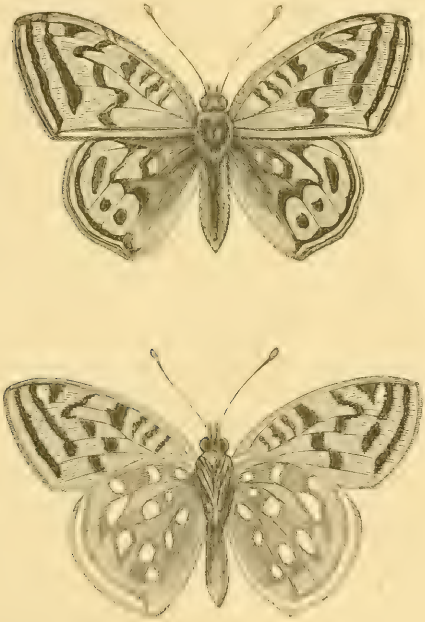
Answers to Correspondents.



Variety of Argynnis Aglaia: Upper and Under Sides of the same Specimen.

Variety of Aglaia.—I beg to send you a curious variety, and one, I think, not figured in any work, of Argynnis Aglaia, which I captured, near Beachy Head, on the 15th July this year. I also took on the 24th August, at Folkestone, a curious specimen of Colias Edusa, three of the wings being precisely similar to those of the female, and the fourth, which is the left fore wing, that of the male. Does this often occur?—*M. N. Inman; 10, Upper Hamilton Terrace, N.W.*

The wings are of a bright sienna-brown; the fore wings have the costal margin edged with black, and the usual four long transverse black spots, known as the *date* mark, under the base of the subcostal ray on the upper side; a waved and irregular narrow black band crosses the middle of the wing, and between this and the hind margin are two oblique black bars, the inner of which is slightly interrupted, the outer entire; the inner takes the place of the transverse series of round black spots, usual on this part of the wing; the outer black bar represents the usual scalloped black bar exterior to the series of black spots, to which I have just alluded; still exterior to this is a double black line parallel to, and almost adjoining, the hind margin; the hind wings have a few of the usual black markings near the base, and extending towards the middle of the wing, and exterior to these is a transverse series of three black spots, the first oblong, the others nearly circular; parallel to the hind margin is a continuous black bar, and exterior to this a double black line parallel to, and almost adjoining, the hind margin. On the under side the fore wings present no very remarkable character: the silver spots on the disk of the hind wing correspond in number with those of the normal insect, but it will be seen, by a reference to the lower figure, that they differ in form; the most remarkable deviation from normal character is that the usual series of seven semicircular silver spots parallel to the hind margin is entirely absent, and its place supplied by a continuous silver bar parallel to the margin. It need scarcely be observed that the term parallel is not strictly applicable, as the markings thus denominated ought to be straight, whereas, in this instance, they follow the curved outline of the wing. In reply to Mr. Inman's query as to the monstrosity in the specimen of Colias Edusa, I may reply, without hesitation, that such monstrosities rarely occur; nevertheless, I have known instances, more especially in Mr. Bond's rich collection, of specimens which have one wing only male, and others with one wing only female.

Description of Phycis Davisellus.—At p. 444 of the November 'Entomologist,' Mr. Davis announces the discovery of a new Phycis in the Isle of Wight, and, at the same time, he placed it in my hands to name and describe. Not having been able to find a previous description, I have written the following by Mr. Davis's request:—The palpi are acutely pointed, and the tips naked; the colour of the wings is pale wainscot-brown; there are two transverse bars of a darker or sepia-brown; the first of these is nearer the base than the middle of the wing, and is interrupted at half its length; the second is parallel with the hind margin, and slightly bent; between these bars is a white longitudinal line occupying nearly the middle of the wing; this appears to pass through the inner dark bar, and to extend towards the base of the wing, but does not reach it; at the distal extremity it is forked; below this white line are two others much shorter, and immediately adjoining the first brown bar; these three white markings are seated on wing-rays, by which position they are raised and rendered conspicuous; the second or outer transverse bar is combined on its outer border with a pale bar; both are narrow; a black spot is attached to the first or inner bar on its inner border. This insect is about the size of P. formosellus, but is totally different in every other respect. It is possible, and indeed probable, that a previous description of this species may have been published on the continent; if so, I trust implicitly to the vigilant and unremitting kindness of publishing entomologists to point out my error.

Orgyia pudibunda, &c.—In reference to O. pudibunda (Entom. v. 428) I have known a whole brood of eggs hatch and feed up and emerge the same season. Also I have bred imagos from Caja, Plantaginis, Russula, and Fuliginosa, all from eggs laid the same season. I once had a third batch of eggs from Fuliginosa, and had some imagos from them; the rest hybernated in the larva state: so there were mother, daughter and grand-daughter, all the same season. By keeping the larvæ and pupæ warm, you will bring the same result I have stated. The entomologists down here call it forcing them.—*William Johnson; 26, Brenton Street, Park Road, Liverpool.*

Orgyia pudibunda.—Referring to Mr. Earl's communication in last month's 'Entomologist' (v. 428), I may mention that having received a lot of pupæ from Mr. Harwood, of Colchester, among which were four Pudibunda, I was surprised to find a fine female in the breeding-cage, about a week ago, and since then have had a second out, also a female, which is at present alive. She seems almost torpid, as the cage is in a thorough draught from an open window; and I shall let her remain in peace as long as she is quiet. While I am writing I may as well mention that a very fine female S. Convolvuli was found floating in the river at South Shields, in September last, and is now in the collection of Mr. Eales, of that town. It was unskilfully handled at first, and so is slightly damaged; but, considering what it has gone through, it is a fine specimen. I can confirm all that Mr. Maling says about the season having been unfavourable in this district; and, with the exception of between twenty and thirty Elymi, I have taken nothing particular.—*J. C. Wassermann; 5, Brunswick Place, Newcastle-on-Tyne, November* 2, 1871.

Orgyia pudibunda.—With reference to the paragraph in the 'Entomologist' for November (Entom. v. 428), respecting Orgyia pudibunda, I have to inform you that last year I had eggs of this insect, which hatched on the 10th of May. I noticed some of the larvæ spinning up on the 7th of August. On the 2nd of September three imagos appeared; whilst some of the larvæ were still feeding.—*William Talbot; Mount Pleasant, Wakefield, November* 10, 1871.

Hybrid Smerinthi.—I also bred hybrids betwixt Smerinthus ocellatus and Smerinthus Populi; some of them remaining only twenty-two days in the pupa state.—*Id.*

Galls and Gall-makers.—The following notes refer to some gall-making and parasitic insects, which Mr. Moncreaff has kindly forwarded to me, with his manuscript remarks:—

Tephritis signata, *Meig.* "Reared on September 14th, from galls in the receptacle of Inula crithmoides; the receptacle becomes thickened and enlarged, and has a hard woody texture. About seven cells in one flower-head. The larva forms a cocoon."

Phytomyza lateralis, *Fallen.* "Reared from flower-heads of Matricaria; feeds in the receptacle, and forms a cocoon in it."

Mecinus collaris, *Germ.* "From galls on Plantago maritima; the Hymenoptera (Pteromalus imbutus, *Wlk.*) are parasitic on that beetle, and are found in its galls, and form a close-fitting case. The small gnats (Cecidomyia sp—— ?) were also reared out of that plant."

One specimen of Tetrastichus Diaphantus, *Wlk.*, accompanied the three preceding species: it is, probably, parasitic on the Cecidomyia.

Three species were reared by Mr. Moncreaff from the stem of the dock. 1. A little Dipterous fly (Muscidæ) unknown to me. 2. A species of Cynipidæ. 3. Syntomopus incurvus, *Wlk.*, probably parasitic on the Dipterous insect.

"From the willow herb." The fly much resembles Tetrastichus Adalia, *Wlk.*, but the antennæ seem to be darker and stouter.

Bracon tenuicornis, *Wesm.*, and Isosoma hyalipennis, *Wlk.*, from Triticum repens.

"The galls in the stems of Festuca ovina are of two sorts: one single-celled, and containing only one larva; the other many-celled, and each cell containing one larva.

"Last autumn I separated these as closely as I could, and placed each description of galls in close-corked bottles, and I felt somewhat confident that by this means I should discover the true gall-maker, which I fully expected to emerge from the single-celled gall. I now send you the flies that emerged in May and June." The flies from the single-celled galls are Eurytoma collaris, *Wlk.* The flies from the many-celled galls are Eurytoma collaris, Isosoma depressa, *Wlk.*, Decatoma mellea, *Wlk.*, Pteromalus fulviventris, *Wlk.*, and Trigonoderus hirticornis, *Wlk.?* The Isosoma was the most numerous, and next to it the Pteromalus and the Decatoma; the Eurytoma was few in number; and of the Trigonoderus there were only two specimens. The Pteromalus and the Trigonoderus may be considered to be parasitic on the three genera of Eurytomidæ, and this family, of which, among all the Chalcidites, the abdominal structure most resembles that of the Cynipidæ, appear to be occasionally gall-makers, and occasionally dwellers in galls made by other insects.—*Francis Walker.*

Chelonia caja bred from eggs laid this year.—This day, November 8th, I have seen a specimen of C. caja alive, from pupæ, the eggs laid this year. I have had also a larva of B. Rubi turn to pupa without any cocoon whatever. Is not this singular? I always thought they hybernated.—*W. Mann; Bristol.*

Liparis dispar.—The following notes on L. dispar may be interesting to Mr. Clifford and others. On July 5th, of this year, I was fortunate enough to find two of the larvæ. They were feeding on a rose-tree, between Tilbury and Southend, just off the Thames marshes. I would add to the description of the larvæ, as given in Newman's 'British Moths,' that the tubercles on segments 2, 3, 4, 5, 6, are of a deep blue colour; those on 7, 8, 9, 10, 11, 12, of a blood-red. The larvæ were full fed on July 10th and 15th, and then spun very slight webs. They fed on whitethorn or rose, with equal readiness. A perfect insect appeared on July 28th, a very fine male; and a female on August 5th: this latter was unfortunately a cripple. Both insects were of the typical form.—*R. W. Bowyer; Haileybury College, near Hertford.*

Entomological Pins.—A correspondent regrets the perishable condition of the ordinary entomological pin, when acted upon by the corrosive matter formed in the bodies of many preserved insects. I would suggest pins made of aluminium, or aluminium bronze, which probably will resist this acid reaction. At any rate, should any compound of aluminium be formed it will be colourless, and, therefore, will not disfigure natural-history specimens with verdigris spots. Some of our collectors, who live in the manufacturing districts, may have it in their power to turn out pins from aluminium wire. By so doing, they will confer a benefit on the entomological public.—*G. B. Buckton.*

Chelonia caja; second brood.—As you are interested in the life of my Caja (Entom. v. 425), I have much pleasure in telling you the large larvæ began to spin on the 8th September. Some came out the middle of October; and they continued to emerge until the first week in November. Some were very fine; the largest in expanse of wing measuring $3\frac{3}{16}$ inches. Three which came out in November I have left in the feeding-cage, to see if they will hybernate in the perfect state.—[*Miss*] *E. Bethell; Croydon, November* 23, 1871.

EDWARD NEWMAN.

Description of the Larvæ of Acidalia subsericeata and mancuniata.—The following notes on the larvæ of these species or varieties may, perhaps, prove interesting. For the opportunity of comparing the two, I am indebted to the kindness of the Rev. J. Hellins, of Exeter, who sent me the larvæ in July, 1870. They fed on Polygonum aviculare; and, on August 25th, I described them as follows. *Subsericeata*:—Length about three-quarters of an inch, tolerably stout posteriorly, but tapering considerably from the 9th to the 2nd segment; head small, nearly as broad as the 2nd segment, and notched on the crown; a division in the centre of the face renders the cheeks, which are rounded, prominent and distinct; body flattened when seen from above, but rounded on the ventral surface; divisions of the 6th, 7th, 8th and 9th segments, very conspicuous, the anterior end of each being narrower than the posterior; there are a few scattered, but scarcely perceptible, hairs, most conspicuous on the 2nd segment, when they are pointed forwards; skin ribbed transversely and rather tough; ground colour composed of several shades of brown and ochreous, the 8th and 9th segments being conspicuously of the latter colour, some specimens having a faint green tinge; head ochreous, surrounded with dark brown; mouth, and central divisions of the face, black; from the notch in the head extends the fine pale grayish dorsal line, bordered on each side with an equally narrow dark line; dorsally, on the anterior part of the 9th segment, is a conspicuous rust-coloured mark, shaped somewhat like an arrow-head, the apex pointed anteriorly; there are a number of confused brown markings along the spiracles, which are of a still darker brown; usual segmental dots conspicuous, black; the ground of the ventral surface is of a beautiful slate-colour, with a series of curiously-shaped dull black marks throughout its entire length, which give it a very pretty appearance. When at rest the food-plant is grasped by the claspers, the body stretched out at full length, the head being brought slightly forward, and tucked in amongst the legs. *Mancuniata*:—In habits and shape precisely like Subsericeata, but, *perhaps*, a trifle more slender; ground colour dark brown, strongly tinged with chocolate, and without the ochreous markings so conspicuous on the 8th and 9th segments in Subsericeata; head marked as in that species, but duller in appearance; dorsal line also similar to Subsericeata, but the rust-like mark so conspicuous in that species is wanting in Mancuniata, but in one variety it is replaced (though in a different position) by two distinct white chalk-like marks; ventral surface as in Subsericeata. At the time I had my larvæ, my friend Mr. J. P. Barrett, of Peckham, also reared a brood of Subsericeata, and, as his notes differ slightly from my observations, I append them. In a letter dated October 25th, 1870, he says:—"I received a drawing of Mancuniata from Mr. Doubleday this morning, and should like to know whether your notes agree with mine. The figure was taken by Mr. Buckler, in 1865, from Dr. Knaggs' larvæ. I think it is of a darker brownish tinge, in general, than my Subsericeata, and the black dots are more conspicuous. The last segments are paler than the others, but appear to want the yellowish tinge that Subsericeata possesses. In other respects I can see no difference, either in size or shape." On receipt of this letter I forwarded my Mancuniata larvæ to Mr. Barrett for comparison with his Subsericeata; and, in a letter dated October 28th, he says:—"I am now quite satisfied that there is but very slight difference between the larvæ of Mancuniata and Subsericeata; I believe that you would scarcely be able to pick out the *paler* larva you sent, if it were placed in a batch of Subsericeata. The chocolate-brown one might readily be distinguished, but I should not be surprised if Subsericeata varies similarly. You mention in your notes that the larvæ of Mancuniata are, perhaps, more slender than Subsericeata. I have noticed that in this respect my larvæ varied considerably, but I am scarcely prepared to say, though I suspect such to be the case, that the more slender larvæ produce the smaller insects, *viz.*, the males. The figure before mentioned" (Mr. Buckler's) "is taken from a larva as stout as any I have had. The chief point of distinction that I have noted is the ochreous marking on the latter segments, and, with respect to this, it varies much in intensity. A batch of larvæ that I had last year, belonging to Subsericeata, scarcely possessed that marking, whilst those (or some of them) I had lately were very conspicuously blotched." Subsequently, when in Huddersfield, Mr. Barrett saw my Subsericeata larvæ, and found they varied very much from those he had reared; indeed, my Mancuniata were more like his Subsericeata than were my larvæ of that species. I offer no opinion as to the distinctness of the species. — *Geo. T. Porritt; Huddersfield, November* 4, 1871.

Entomological Notes, Captures, &c.

Early appearance of N. Lucina.—On the 7th of June I obtained seventeen eggs of N. Lucina, which commenced hatching about the 13th, the larvæ feeding till the 17th July, when only three survived: these went to pupa about this date, and were left in a cold room. On the 6th of October I was surprised to find one had emerged, a beautiful specimen; and on the 20th of the same month another made its appearance, though not quite such a perfect specimen as its predecessor. The third is still in pupa, in which state I conclude it will remain like a rational insect until June next, which, I believe, is the proper time for its emergence. Is not this unusual, where the pupæ were kept in a cold temperature?—*M. N. Inman.*

The Genus Platypteryx.—From facts I have observed in connection with this genus, I have arrived at the conclusion that they are very capricious in their appearance, and may be met with from early spring to the close of the autumn. Hamula seems to be triple-brooded; and very probably Lacertula also. Both of these I have reared from the egg, but have never succeeded in obtaining eggs from Unguicula or Falcula, so that I know little of their economy, but have taken them by beating in May and June, although I have never been able to discover any second brood in September. I shall be glad to hear of the experience of any brother entomologist with respect to these two species (Falcula and Unguicula). The first specimens of Hamula which I took this year were on the 20th of May, three in number, one being a female. The next specimen I took was on the 24th of May; this was also a female, and laid about a dozen eggs. These eggs hatched on the 2nd of June, and the young larvæ fed for a month, and then spun up (July 6th and 7th). The imagos from these emerged on July 20th and 21st; and I obtained a further supply of eggs. The young larvæ hatched from these, fed well till the beginning of August, when they all died off, on account of being left in a window in a scorching sun. Had these larvæ lived and turned into pupæ, I believe that the imagos would have emerged this year; and this supposition is founded on the fact of my having taken a specimen of Hamula (at light) on the 21st of September last year. Thus, it appears to me that there must be three broods of Hamula a year. I believe that Lacertula is also triple-brooded, but have not positive proof. As in the case of Hamula, I took the first specimen of Lacertula on the 24th of May this year, and the larvæ produced from eggs laid by this female turned to pupæ on July 2nd, feeding up much more slowly than those of Hamula. The pupæ were only three in number, two of which emerged on the 11th of August, and one still remains in the pupa state. The two imagos laid a batch of eggs, which unfortunately proved unfertile. Had they hatched into larvæ the imagos would probably have appeared in September. I mentioned in the 'Entomologist,' last year, the capture of a specimen of P. Lacertula at the end of April, and I now believe that it was a hybernated specimen of the September brood of 1869, since it was not freshly emerged, nor have I ever met with the perfect insect before the 20th of May.—*G. H. Raynor; Dryhill Park, Tonbridge, November* 15, 1871.

Breeding Cossus Ligniperda and Zeuzera Æsculi.—For the information of Messrs. Arthur du Moulin and J. R. S. Clifford, I venture to send a few remarks respecting C. Ligniperda and Z. Æsculi, having had much experience with both species. I do not think the method you suggest with Ligniperda larvæ would prove effectual, as muslin would not restrain them. Both species should be taken when full fed. When I first tried Cossus larvæ they ate through a half-inch deal box, and finished up by devouring a lot of cork setting-boards. I next tried them by putting some willow-stumps, containing the larvæ, in a small brick house I built in my garden, and in the following June found the empty pupæ cases sticking out of the mortar on the outside (not one, but a dozen or more). I next tried them by putting some larvæ in a large garden-pot, about fifteen inches deep, with a little mould in the bottom, then some pieces of decayed willow, and covered it with glass. I found this plan succeed admirably, rearing all the larvæ. Cossus larvæ invariably feed in the trunks of large trees, seldom going higher than five feet from the ground, and in the autumn months may be found full fed under the bark of the trees infested with them, some inch or two under the ground. With Æsculi it is very different, as they are found at the top of high ash or elm trees; they feed on the sap or centre of the small branches, varying in thickness from one's finger to one's wrist. Their presence may be ascertained by the small pellets of pink frass lying about under the trees. I noticed some trees so infested two years since in Tuffnell Park. Myself and others obtained permission to cut some of the branches, which we kept in a damp place, and from which we succeeded in rearing many of the perfect insect. I went to the same trees in July, and took twenty dozen imagos from one tree; they were all in the topmost branches of a large elm. I divided the specimens I secured with two or three brother entomologists who accompanied me, and we could have taken as many more if we had required them. I notice that the trees in my neighbourhood are much infested with the larvæ this autumn. I have found the larvæ of Æsculi in the branches of elm, ash and pear, and in the small trunks or stems of whitethorn, lilac and box.—*J. Russell; 18, Mount Pleasant Road, Hornsey.*

Larvæ of Bombyx Quercus feeding on Ivy.—It may be interesting to some of your readers to know that some little time ago I found the larvæ of B. Quercus feeding on ivy in the garden. Is not this a very unnatural food-plant for this species? The larvæ in question must, I think, have been produced from some eggs which I threw away during the summer. I suppose, on being hatched, they began to feed on the first thing that came to hand, which happened to be the ivy. I cannot otherwise account for their strange choice.—*M. A. J. Pitman; Oxford House, Kidbrooke Park Road, Blackheath.*

[In a case like this, where the names have been confused and frequently transposed, it would be interestlng if my correspondent can state positively whether the species intended is the old Quercus of Linneus, now usually called Callunæ, or the Quercus of Doubleday's List, which I have suggested should be called Familiaris. Most entomologists are sufficiently acquainted with these insects to have formed an opinion of their distinctness or otherwise, and, therefore, can easily make it apparent to which they refer.—*Edward Newman.*]

On Breeding Acherontia Atropos.—On the 23rd inst. a fine male specimen of Acherontia Atropos emerged in one of my cages. The specimen was bred from a larva brought to me at Lyndhurst, as already recorded. The larva was of the olive variety, with white spots on the anterior segments; it was full fed, and buried August 21st. The pupa I kept moist on flannel laid over twigs and moss, and its cage was placed in the kitchen as near the stove as possible. I took care to leave a kind of bank in front of the pupa, so that it had something to press against when the imago was ready to emerge. I also placed two twigs exactly in front of it for the imago to crawl up. I think I moistened the moss and flannel about half a dozen times after removing it (the pupa) from the earth. I send this because it appears that it is considered rather a "slice of luck" to breed Atropos on the first trial. Apropos of this larva I may mention the following, which occurred to me, and shows what curious ideas of natural history in general many persons have:—The cage in which I transported the larva from Lyndhurst to London happened to be rather insecure, so the larva, which was roaming about in search of a place to bury in, amused itself by coming out and taking exploring excursions round the railway-carriage (a first-class one). The first time it escaped it was discovered crawling under the seat, and a lady who was in the carriage, and was much struck by its appearance, enquired (quite seriously), "Is the creature a fish?" I was, previously, unaware of any likeness existing between a Lepidopterous larva and a fish. Perhaps the lady imagined it was "a walking perch."—*Bernard Lockyer*; 179, *Camden Road, London, N.W.*, *October* 30, 1871.

Larvæ of Bombyx Rubi burying in the Earth.—On the 14th of September I found two Bombyx Rubi caterpillars, and on the 23rd another. I should imagine that they were very nearly full grown; and I fed them on bramble up till about the 19th of October, when they one by one began to disappear. To-day, on digging in the earth of my breeding-cage, I came upon them all three, about half an inch under the surface, curled up in a ring, and apparently quite alive and well. I shall be very glad if you will tell me, through the means of the 'Entomologist," if it is usual for this species of caterpillar to hybernate, as, from your book, I understand that they generally spin a large cocoon in the leaves of their food-plant, and remain there till the following June.—*Byron Noel; East Budleigh, Budleigh Salterton, South Devon, October* 29, 1871.

Thera firmata in October.—I have lately captured three specimens of Thera firmata, on October 23rd, 27th, and November 15th respectively. Your work on 'British Moths' mentions July as the time that the moth appears.—*A. F. Buxton; Rugby, November* 22, 1871.

Two Larvæ in One Cocoon.—I have bred a great quantity of E. Lanestris this year, and have found three or four instances of two larvæ using the same cocoon. I opened one and found that it had no partition of any kind inside. I just mention this thinking it may interest you.—[*Rev.*] *A. C. Hervey; Colmer Rectory, Alton, October* 26, 1871.

Eremobia ochroleuca near Weymouth.—On the 9th of September last I captured a specimen of Eremobia ochroleuca on the Downs, near Weymouth, Dorset. This is not one of the few localities mentioned in your work on 'British Moths.'—*A. F. Buxton; Rugby School, November* 4, 1871.

Aplasta ononaria at Folkestone.—I had the pleasure of taking Aplasta ononaria (a fine female) here, on Monday last.—*William Purdey;* 15, *Grove Terrace, Folkestone, June* 23, 1871.—*E. M. M., September*, 1871.

Lepidoptera in Ayrshire.—I may mention as I am writing that I captured a fine specimen of Plusia Festucæ, on the night of the 30th June. Is not this an unusually early appearance? I also took Thyatira Batis in the last week of May; and the insect was very plentiful here in June. Festucæ was flying over the raspberry bushes when I captured it.—*Henry Anderson; Cloncaird Castle, Maybole, Ayrshire, August* 7, 1871.

Economy of Sesia Tipuliformis.—Having cut open some twigs of the black and red currant last September, I was astonished to find larvæ of the above of considerable size, in fact, nearly full grown to all appearance, being almost identical with those I have discovered in March and April. At other times, in splitting the stems and twigs in autumn, I have found the larvæ small, and I supposed, with others, that they fed on slowly through the winter. It is the more remarkable that the larvæ should be large this autumn, because, in the same spot, the imagos appeared later than usual this year, and were not out until the second week in July. It seems, therefore, possible that some individuals of this species may pass two winters in the larval state. I hope, next year, to be able to make a careful examination of the bushes, during the time the perfect insect is out.—*J. R. S. Clifford;* 59, *Robert Street*, *Chelsea.*

Female Moths at Sugar.—The overwhelming majority of the female moths which resort to sugar will be found to be, as I believe, unimpregnated, and, hence, the eggs they deposit, while imprisoned, are not good for anything except microscopic objects. The chief object of the females, throughout their lives, is evidently the continuance of the species; and, immediately they are prepared for the work of oviposition, they betake themselves to this with diligence, and neglect the attractions of sugar and flowers. It has been supposed by some that the organs of smell are much more acute in most male moths than in the females, and, were this the case, it would account for the admitted paucity of females at sugar. Anatomy, however, does not throw much light upon this subject; and, before we can decide as to the relative functions of the organs of smell in male and female moths, we must be able to answer, with positiveness, the question:—"Where does the sense of smell reside?"—*J. R. S. Clifford.*

Hepialus lupulinus (second appearance).—This species is usually constant in its time of appearance, being on the wing, near London, in the early part of June, and seldom affected much by change in the temperature. I discovered, last September, specimens in good condition on palings, near Fulham; and as these were hardly likely to have been survivors of the June brood, there must have been a partial second emergence. I have no doubt, in some places, the larva does a degree of injury to the roots of the potato, as the moths swarm occasionally in and about potato-fields.—*J. R. S. Clifford.*

Cerastis erythrocephala at Darenth Wood.—I took a fine specimen of Erythrocephala in Darenth Wood, at sugar, at the end of October. I took it at first for a variety of Spadicea; I think it might easily be overlooked for a pale variety of that species.—*J. Moore; 51, Chapel Street, Pentonville.*

Extracts from the Proceedings of the Entomological Society, November 6, 1871.

Preserved Larvæ of Lepidoptera.—Mr. R. L. Davis exhibited an extensive series of beautifully preserved larvæ of Lepidoptera and other insects. Among them were specimens illustrating the complete natural history of Cossus ligniperda, and of some other common species. Mr. Bond exhibited examples of Zygæna exulans, a recent addition to the British Fauna, captured at Braemar, by Dr. F. Buchanan White. Also a specimen of Catocala Fraxini, captured in the Regent's Park, on the 12th of September last; and he remarked that the insect had occurred in that locality for three successive years. Furthermore he exhibited a very singular variety of Chœrocampa Elpenor, from Ipswich, in which the central portion of each fore wing was perfectly hyaline and free from scales, the insect being in perfect condition, and presenting no indication of the peculiarity having been induced by artificial means.

[These specimens of Zygæna exulans have been determined as the variety "Vanadis," which fact I mentioned several months ago on the wrapper of the 'Entomologist.' It was perfectly excusable for my friend Bond to have overlooked a wrapper notice of this kind; but certainly *in*excusable in me not to have inserted it in the body of the work.—*Edward Newman.*]

Black Variety of Melanagria Galathea. Mr. Vaughan exhibited a nearly black variety of Arge Galathea, captured in Kent by Mr. Farn.

New British Coleoptera.—Mr. E. W. Janson exhibited two new, or recently detected, species of Coleoptera, captured by the Rev. A. Matthews, as follows:—"THROSCUS CARINIFRONS, de Bonvouloir, Essai Monographique sur la Famille des Throscides, p. 20, tab. i. fig. 5 (1859). At first sight resembling T. dermestoides, *L.*, but at once distinguished from it by the ocular depression extending *right across* the eyes; more nearly allied to T. elateroides, *Heer* (T. gracilis? *Woll.*), but readily separated therefrom by its superior size, the prominence of the lateral frontal longitudinal ridges, which extend to the anterior margin of the prothorax, the sinuated sides and prominent posterior angles of the prothorax, especially in the males, and the somewhat finer punctuation of the interstices of the elytra. Three specimens taken by the Rev. A. Matthews, in company with T. dermestoides, by sweeping in a plantation near Chiselhurst, in July, 1869, and shortly after placed in my hands for identification. CRYPHALUS PICEÆ, Ratzeburg, Forst-Insecten, i. p. 163 (1837). Allied to C. Abietis, *Ratzeb.*, but larger, less convex, the elevations on the anterior part of the prothorax larger, and arranged in five or six tolerably regular rows, the striæ of the elytra distinct, and the interstices, especially towards the apex, with sparse erect yellow bristles. One specimen taken by the Rev. A. Matthews, many years since, in the vicinity of Weston, Oxon.'

[I have purposely omitted the mention of Formica Herculanea as a British insect, because I consider the evidence unsatisfactory, and calculated only to mislead.—*Edward Newman.*]

Death of Mr. Lock.—It is my melancholy duty to record the early death of Mr. George Lock, of the Turkish Baths Newport, Monmouthshire. He caught a violent cold, which induced gastric fever, and terminated fatally on Monday, the 30th of October. He has left a large quantity of British insects, which he has employed many years in collecting and breeding, in which latter occupation he was particularly successful. The destination of his collections has not yet been communicated to me. I have been under much obligation to him, for the promptitude with which he communicated both information and specimens.—*Edward Newman.*

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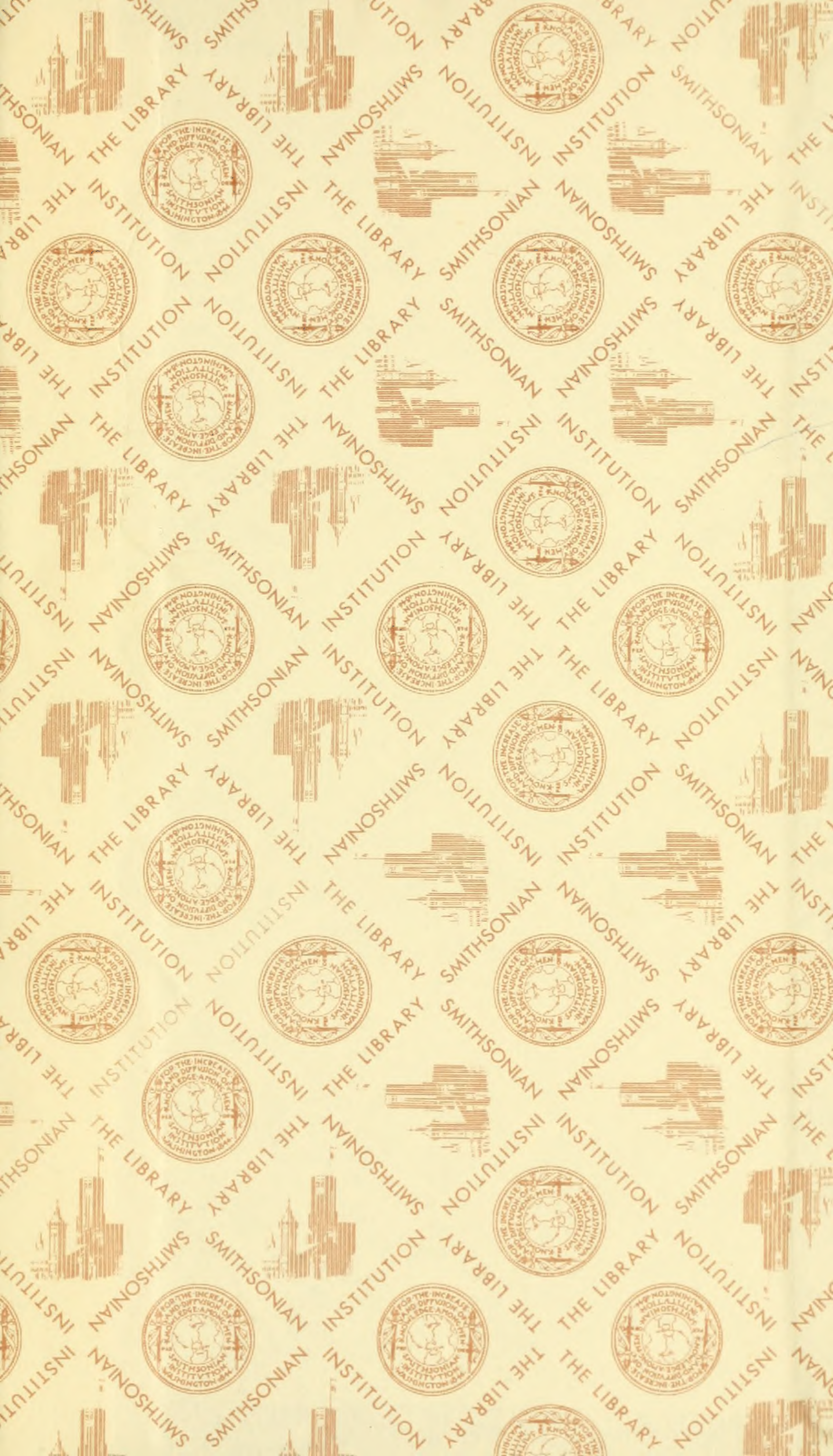

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